

Vol. II

FEBRUARY, 1922

No. 2

The Candy Manufacturer

THE SWEETEST INDUSTRY'S MOST AUTHORITATIVE MAGAZINE

*A Specialized
Technical and Commercial
Magazine for Manufacturing
Confectioners Exclusively*

IN THIS ISSUE

Present Conditions—The Cause and Remedy
V. L. PRICE

Treating Overhead Expense
CLYDE E. MURRAY

Crystallization Testing of Corn Syrup
DR. FREDERIC W. MURPHY DR. A. P. BRYANT

Color in Food
H. GARDNER MCKERROW

Next Issue, March, 1922
The Sales Managers' Number

The Candy Manufacturer Publishing Co.
Stock Exchange Building
CHICAGO

Pass The Candy Manufacturer around

After reading forward to:

Superintendent		Chemist
Purchasing Dept.		
Sales Manager	Return to	



DELFT

The World's Best Food Gelatine

HAROLD A. SINCLAIR, 160 Broadway, NEW YORK

"Price is a relative term—Quality always a concrete fact"

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1112 Western Ave., Seattle, Wash.

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In July, 1920, I sent out a circular to the trade announcing Delft Gelatine and closing with the following:

"P. S.—Preserve this preliminary notice and remember I will later prove the following facts relative to Delft Gelatine:

"Lowest in Bacteria.
"Purest on analysis, when analyzed by the American Official Method.
"Color, sweetness, clarity, jelly, superior to the bulk of Gelatine now in use."

And now the proofs are coming in. A well-known food-control official writing us:

"I am sending you the final test of your gelatine. You will note that Delft tested very excellently in all respects."

An important confectioner writes us:

"We appreciate very much the reductions that you have made recently in the price of your goods. These gelatines are very satisfactory."

Other letters from prominent manufacturers all over the country tell us that they are saving money by using Delft Gelatines, and getting far better results in their products.

We shall be glad to send you samples and prices.

WANTED

To Buy All Available Back Issues OF

The Candy Manufacturer

The full annual subscription price of twenty-five cents per issue
will be paid for all back copies returned.

We have over 200 unfilled requests for the January
issue—The Superintendent's Number.

The original press order of three thousand copies
was necessarily increased to four thousand, to sup-
ply sample copies to all known candy superin-
tendents, chemists, foremen and practical men of
the candy factories in addition to our regular list
of all manufacturing confectioners and chocolate
factories in the United States and Canada. Re-
quests and orders for the Superintendent's Number
are still being received. Therefore, we will be very
grateful for the return of any copies which are not
being filed for future reference.

THE CANDY MANUFACTURER seems to have
sold itself again to our original subscribers, as we
are receiving additional subscriptions for individu-
als in the factory—most of them receive the maga-
zine at their home addresses where the various
technical articles can be studied at their leisure.

*Every back copy of THE CANDY MANUFAC-
TURER is at a premium—we are swamped with
orders for Volume I containing the complete serials
by Dr. Murphy, Dr. Bryant, Clyde E. Murray and
Emil Pick.*

*We can use soiled or mutilated copies of our Jan-
uary issue which contain all or any one of the fol-
lowing articles: "Invert Sugar," "Corn Syrup,"
"Coloring Material in Confectionery," "Brazilian
Cocoas," and "Manufacturing Control."*

These serials will no doubt be available in book
form at some later date, but that does not satisfy
our readers now.

Return all back copies you can spare to

The Candy Manufacturer Publishing Co.

Stock Exchange Building (Not the Wrigley Bldg.)

CHICAGO, ILL.

Members: National Confectioners' Association, Midland Club, Chicago Association of Commerce.
Applicant for Membership in Audit Bureau of Circulation.

The Candy Manufacturer

Registered, U. S. Patent Office

"READ WHEREVER GOOD CANDY IS MADE"

*A Specialized Technical and Commercial Magazine for Confectionery
Superintendents, Purchasing Agents and Executives*

PUBLISHED MONTHLY BY

THE CANDY MANUFACTURER PUB. CO., Inc., Stock Exchange Building, CHICAGO

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Field Representative
FRANK SOBEY

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Vol. II

FEBRUARY, 1922

No. 2

PURPOSE

The purpose of THE CANDY MANUFACTURER is to provide a medium of constructive service and communication between manufacturing confectioners exclusively, a high-class specialized business magazine devoted to the problems and interests incident to the manufacture of confections and the management of a candy factory.

POLICY

THE CANDY MANUFACTURER, being a highly specialized publication, is edited in the interest of the executive, the purchasing agent, the chemist and the superintendent exclusively, and provides a medium for the free and frank discussion of manufacturing policies and problems, methods and materials.

The same corresponding policy applies to the advertising pages which are available only for a message directed to manufacturing confectioners and relative to a reputable product or service applicable to a candy factory.

The Candy Manufacturer believes in

1. A Candy School.
2. A Uniform Method of Standardized Cost.
3. Maximum Labor and Machine Efficiency for an Equitable Wage.
4. The endorsement and adoption of The National Standard Catalogue Size, Invoice Form and Coal Contract.
5. A National Council of Confectionery Superintendents representing local and territorial organizations.

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DO NOT CONFUSE The Candy Manufacturer with other publications with similar names published in Chicago. Be sure of our street address, please: 30 North La Salle Street, Stock Exchange Bldg.



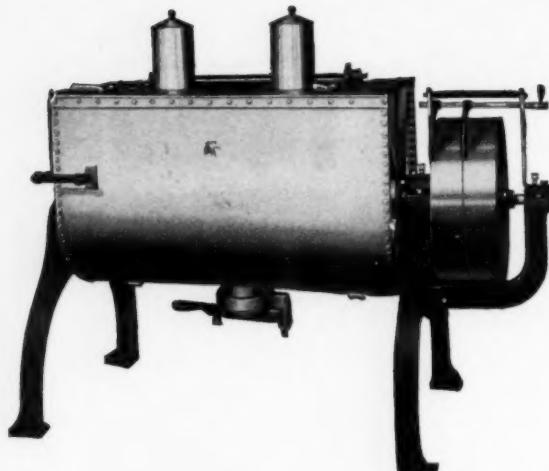
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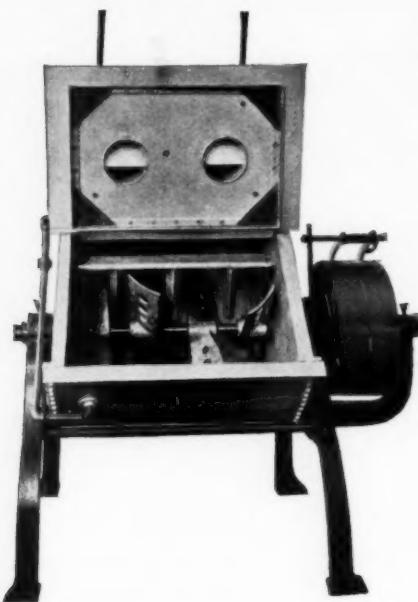
Sales Managers Number





Capacity	Size of Pulleys	Floor Space	Capacity in Gallons	H.P.
60 lbs.	18 x 3 in.	50 x 18 in.	50	3
150 lbs.	20 x 4 in.	58 x 36 in.	80	5
200 lbs.	20 x 4 in.	72 x 36 in.	110	7½

Send for Descriptive Circular.



The Savage Assures Success

The secret of successful marshmallow manufacture lies in the proper beating of the goods.

No matter how excellent your ingredients may be, no matter how carefully the proportions are measured, if you are not equipped with a properly constructed and mechanically correct device for beating and cooling the goods, your efforts will not be crowned with the greatest success.

The Savage Marshmallow Beater Leads

for the very simple reason that, like the entire Savage line, this machine is built by experts,—by men who know the candy business, who know the difficulties confronting the manufacturer, and have produced the necessary mechanical equipment to meet these difficulties.

The fact that this beater is so sturdily and carefully built makes the first cost the only cost. The construction is so simple that

you are never troubled with adjustment of the parts. There are no gears, chains, or complicated parts to get out of order.

If you are looking for a machine that will run day in and day out without repair or replacement, that is constructed to produce the greatest quantity of the highest grade goods, you will not be satisfied with anything but the Savage.

Send for new illustrated circular fully describing this wonderful machine

SAVAGE BROTHERS CO.



A Few of Our Pleased Customers

They Speak For Us

"We now have your Savage Marshmallow Beater installed and same is working out entirely satisfactorily and we do not know how we got along without this machine as long as we did. We would be glad to show this machine to anyone who might be interested in purchasing one from you."

SPOEHR, Chicago.

"We have several of the Savage Marshmallow Beaters in operation in our various plants and in all cases we have found them consistently giving excellent results. We have experienced no trouble whatever with any of the moving parts of your equipment and find the machines to be strong and substantial. In short, we have found that your machine is all that you claim for it and a little more."

E. J. BRACH & SONS, Chicago.

"We think you have the greatest and best marshmallow beater on the market and we have shown our belief in this by purchasing three. We have found them so far superior to any other beater on the market that we have discontinued using all our other beaters, and are using yours exclusively."

**THE CHERRY CHEER CO., INC.,
Sidney, Ohio.**

"We consider the Savage M. M. Beater a wonderful machine and are producing drops that show a saving of one-half to three-quarters pound on each box over the beater that we formerly used. Considering the amount of power required and the volume of goods produced, we are very much pleased with the machine."

**A. B. MEWHINNEY CO., INC.,
Terre Haute, Ind.**

"The Marshmallow Beater purchased from you last spring has now been installed several months. We unhesitatingly state that it is the best machine of its kind we ever used. We are highly pleased with the goods turned out and know positively that our product is better and our sales correspondingly increased in this line on account of the work of this machine."

MARTIN CANDY CO., Marshfield, Ohio.

"The beater is giving us excellent satisfaction, and does the work A-No. 1, and is all you claim for it. We consider it the best M. M. beater on the market today. Since we have put it in use we have taken out two other makes of beaters."

BRECHT CANDY CO., Denver, Colo.

"To say that we are satisfied with the Savage Marshmallow Beater is putting it mildly. As soon as arrangements for the enlargement of our factory are completed we shall want more of your Marshmallow Beaters."

GENERAL CANDY CO., Milwaukee, Wis.

"We are very much pleased with the results we are getting with our Special 200-pound Marshmallow Beater. At a recent meeting of our directors it was agreed that in our new home we will install only your beaters. You may ship us another of the same type as soon as possible."

SENNEFF-HERR CO., Sterling, Ill.

"We have been using one of your 150-pound Marshmallow Beaters for the past two years. We have found this to be a very strong and durable machine; a machine that will stand up under every test to which we have put it. We have found that this beater will produce any kind of marshmallow which we have desired to make. In addition to this being a marshmallow machine, we have found it to be very satisfactory in mixing nougat. We can highly recommend this machine to your trade."

ZION CANDY FACTORY, Zion, Ill.

"We take much pleasure in testifying to the merits of your Marshmallow Beater. From the very outset we wish to emphasize that your beater is all that it is represented to be. From an economical standpoint as well as efficient production we do not think that your splendid beater can be surpassed. We figure that we are saving money in the mixing of our batches, further supported by maximum production."

**THE PAULIN CHAMBERS CO., LTD.,
Winnipeg, Canada.**

2638-46 Gladys Avenue, Chicago, Ill.



Simplex Gas Vacuum Cooker

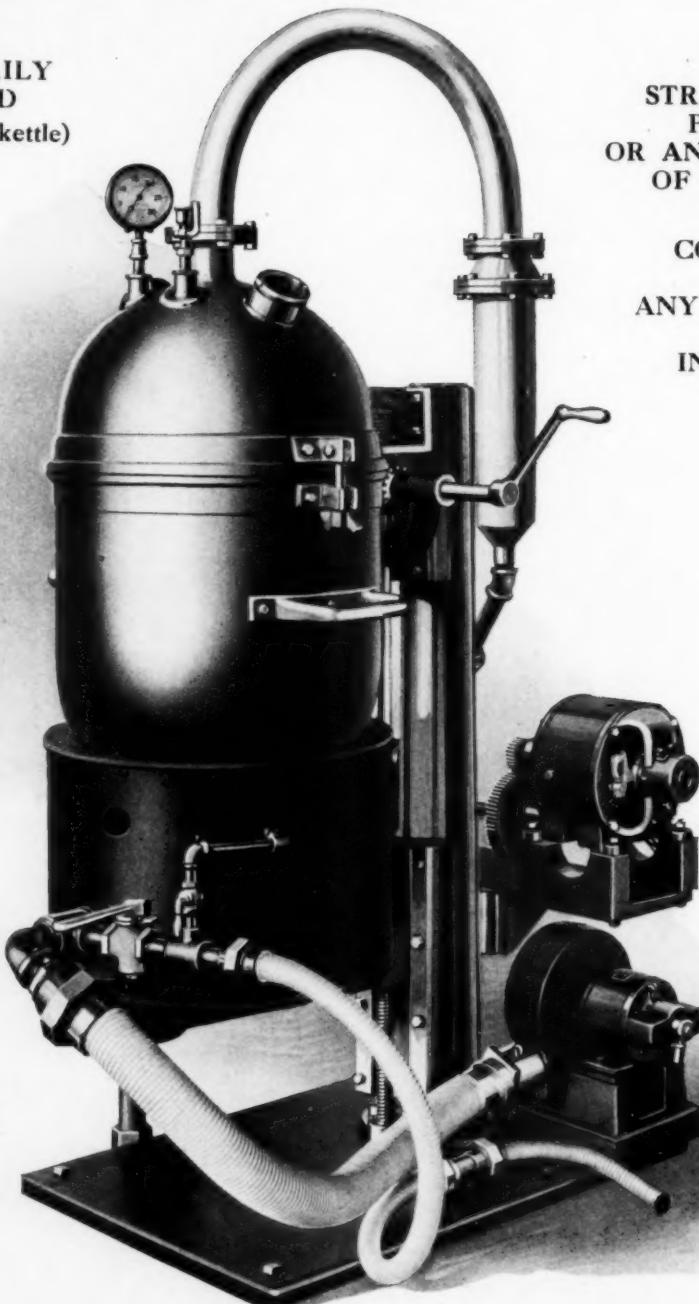
CAPACITY
3400 POUNDS DAILY
GUARANTEED
(With extra melting kettle)

COOKS
STRAIGHT SUGAR
PERFECTLY
OR ANY PERCENTAGE
OF CORN SUGAR

COOKS SCRAP
OR
ANY COMBINATION
OF
INGREDIENTS

400
IN
USE

BUILT FOR
STEAM ALSO



(Process Pat. June 30, 1914)

The Improved Process for Making Hard Candies
DRIER WHITER CLEARER

CHICAGO, 326 W. Madison Street

VACUUM CANDY M

er

GE

N

**IMPROVED SIMPLEX
MOTOR-DRIVEN PLASTIC PRESS**
With 24-inch Mould Bars
FOR FILLED HARD CANDIES



This Machine recommends itself to the conservative manufacturer who wants to make the highest class of filled candies, at the lowest possible cost. Important improvements—which can only be obtained with this machine—make it simple for the inexperienced candy man to turn out filled goods of the highest quality.

Can be adjusted to any practical speed desired.
Greater capacity than any press on the market.

Easier to operate.
Lower labor cost.

*We also manufacture an Improved Sizing Machine
equipped with Automatic Cutting Device.*

**Two Big
Money Makers**



Rex Cream Center Maker

"Takes the hand out of Hand Rolls"

Makes more centers in *15 minutes* than a girl can
make in a *half day*.

Makes uniform centers any size, flat bottoms.

Eliminates waste in cream and coatings.

Prevents leaky pieces.

No hand touches cream, no starch necessary, no
fermentation, no foreign taste.

Any girl can operate.

Save Space, Time, Labor, Worry

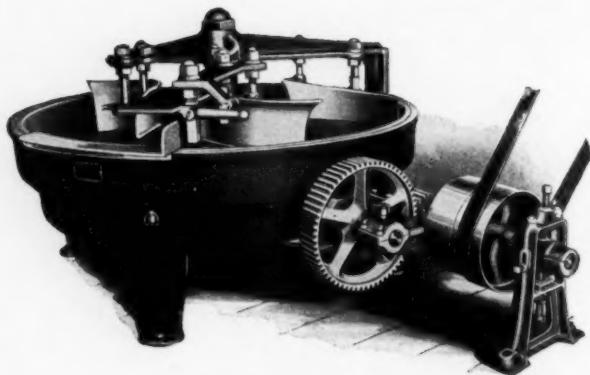
Will Save You From \$20.00 to \$60.00 Per Week
and
IT DOESN'T COST MUCH

DY MACHINERY COMPANY

74 Pearl Street, JERSEY CITY

“You can’t beat ‘em”

The Ball and Dayton Cream Beaters and Coolers



The Dayton Beater and Cooler

References, detailed description and prices
on request.

Fully protected by patents.
Beware of imitators and infringements.

President Harris says: “We cannot avoid competition, as it is inevitable at all times, but we can prepare ourselves to meet it, and the equipment for such preparation will not be the apparently easier method of cutting prices, but by attaining more efficiency in each department.”

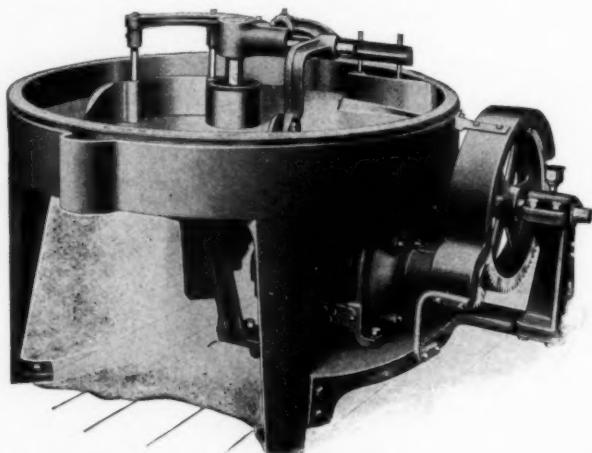
The Ball and Dayton Beaters are proven time-and-money-savers while producing just the kind of work which the finest quality goods demand.

The Answer: Lower costs and more profits.

The Ball Beater and Cooler

The above illustration shows motor attached to machine with gear drive. This can be applied to either our 3, 4 or 5 foot Ball machines, also our 5 foot Dayton machines. Price upon application.

Notice the rigid and substantial construction of the motor attachment.

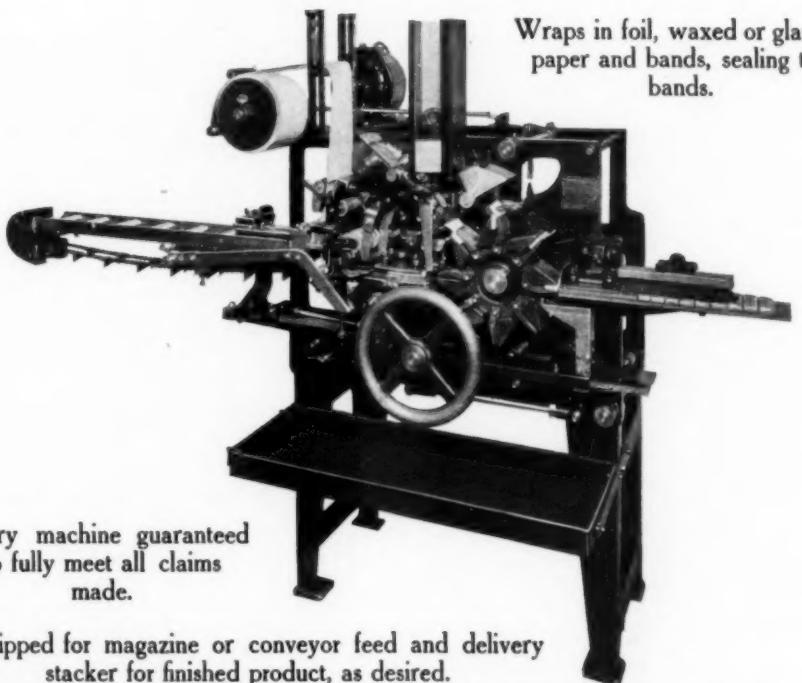


Send for descriptive literature on entire line giving sizes, capacities, horse-power required, speed, weights, details of construction and net prices.

THE BALL CREAM BEATER CO. DAYTON, OHIO

Here it is—

A Wrapping Machine for Small Confections and Other Pieces



Wraps in foil, waxed or glassine
paper and bands, sealing the
bands.

Every machine guaranteed
to fully meet all claims
made.

Equipped for magazine or conveyor feed and delivery
stacker for finished product, as desired.

Operates at speed of 80 to 110 per minute, according to shape and condition of pieces
to be wrapped.

One manufacturer now using more than 10 machines of this type and several other
manufacturers using 1 to 4 machines.

*References from satisfied users if desired.
Send for photographs and information in detail.*

Sold by

L. Weiscopey

30 Church St., New York City

Manufactured by

FERGUSON & HAAS,
515-521 Greenwich St.,
New York City

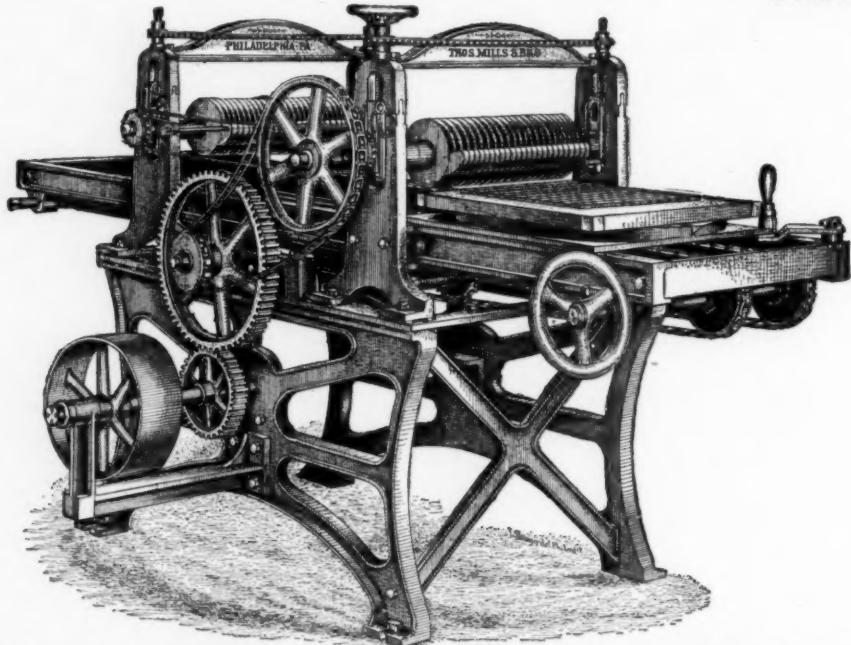
THOS. MILLS & BRO., Inc.

Established 1864

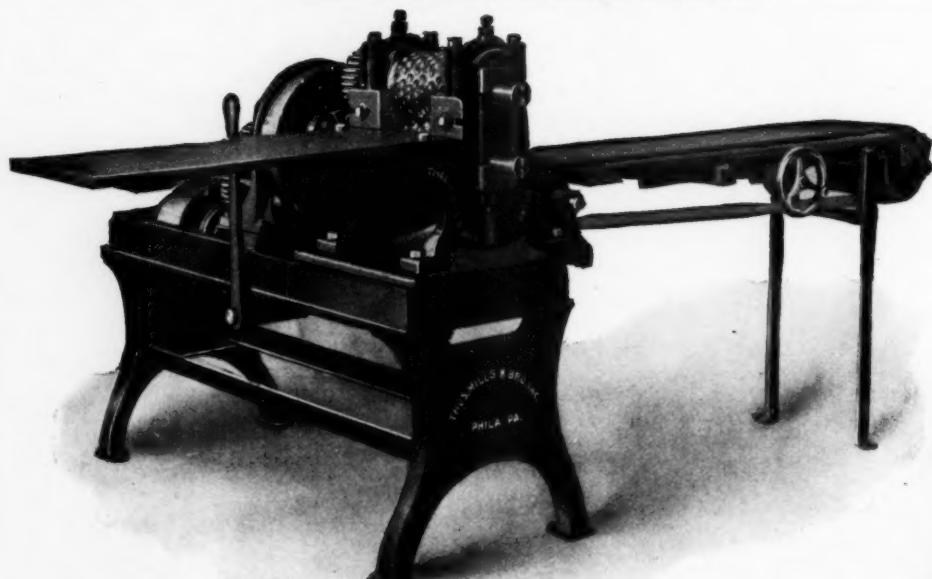
CONFECTIONERS' TOOLS AND MACHINERY

1301 to 1315 North Eighth St.

PHILADELPHIA, PA.
STATION O



Automatic Caramel Cutting Machine—Cuts Both Ways in One Travel of the Bed, Used in Leading Factories for Caramels, Cocoanut Blocks, Etc., Send for Circular.



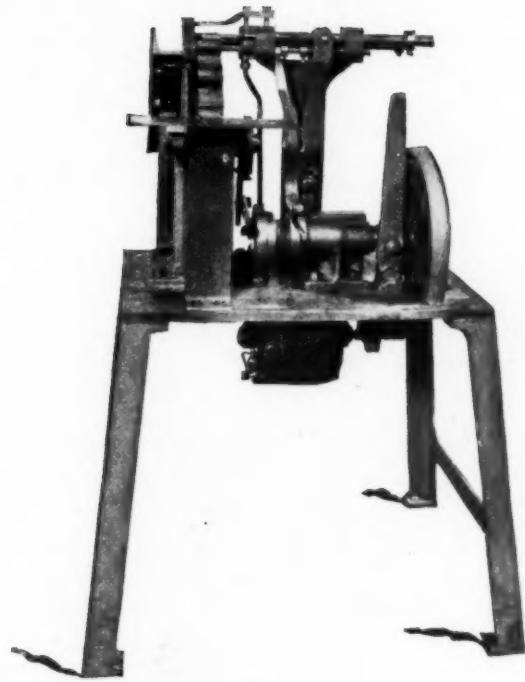
Large Power Drop Frame with Stand and Endless Belt Conveyor; Our Latest Type for Large Output and Heavy Duty.

WHEN IN
CHICAGO



VISIT OUR
BOOTH 32

Our Catalog "O" Should Be in the Hands of Every Factory Superintendent; Sent on Application. Please Mention "The Candy Manufacturer" It Helps.



The Leonard Date Pitting Machine

is a labor saving device for pitting dates, prunes and other small fruit. This was formerly done by hand, in a slow and difficult manner. One machine is guaranteed to do the work of many operators, and in a cleaner and more sanitary way.

The Date is simply placed in the pockets of the feed wheel, and in passing through the machine, it is sent down one chute, while the pits are passed down another, at the speed of forty per minute, or faster if desired.

The Illustration shows the machine as driven by a one-quarter horse power electric motor and can be attached to any lamp socket. As the machine is portable, it can be removed to any part of the building, as occasion may require.

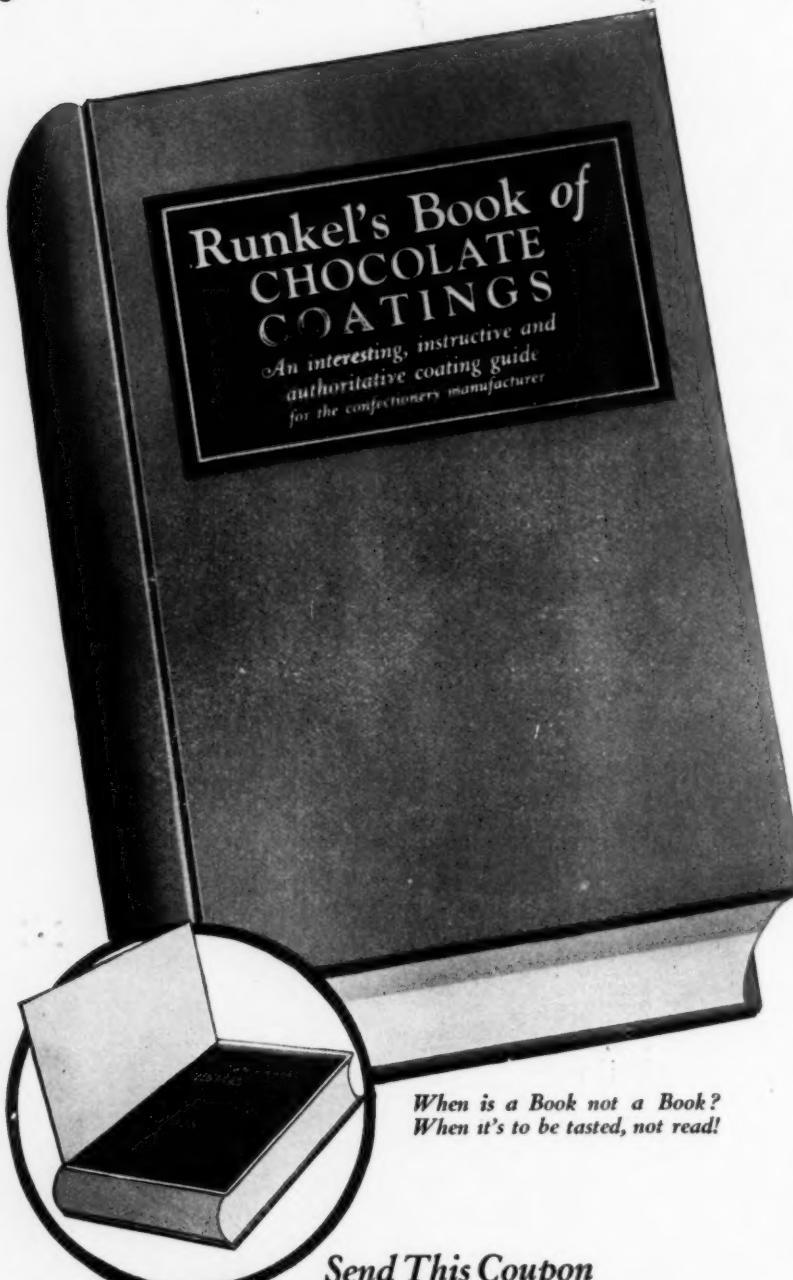
The Advantages are speed, cleanliness and portability, and its remarkable low cost will shortly pay for the first outlay. No Concern, no matter how small, can afford to lose the opportunity to install a *Leonard Date Pitting Machine*.

Let us send you detailed information and net prices

D. B. ERMINGER & SON

2nd Floor Wrigley Building
CHICAGO

A BOOK for Chocolate Candy Manufacturers



**Free Copy
Upon Request**

BETWEEN the covers of this remarkable book, Runkel's—makers of "the cocoa with that chocolaty taste"—have put something that is bound to help you sell more chocolate candy.

It's not something to read—it's something to taste—food for thought and food for your palate—actual samples of

Runkel's Coatings

There are different kinds of coatings for different centers—and they're all *Runkel* coatings—the kind that give your chocolates a reputation for distinction, and that bring in repeat orders.

We shall be glad to send you this "book," *free*, with our compliments. Write for your copy today.

RUNKEL BROTHERS, INC., 445 W. 30th Street, New York City
Kindly send a copy of your first edition of Runkel's Book of Chocolate Coatings, free of cost or any obligation whatsoever except to give contents our careful consideration.

Name.....

Per.....

Address.....

RUNKEL BROTHERS, INC.
450 W. 30th Street, New York City
CHICAGO PHILADELPHIA

Send for this literature—

It gives practical recipes which
have been tested and proven
by successful
confectioners.

It will help you
make the best
candy,—

So will
KOKOREKA

For Chocolate
Coatings and
Caramels

PLASTIKO
For Fillings

PARASUB

For Easter and
Penny Goods

Our practical demonstrators "Armitage" and "Hickey" are in the field constantly, working with the superintendents and practical men of the candy factories. This is part of our service. Can we be of service to you?

Write for free samples and booklet—"Science in Confectionery;" also for our new special literature "Uses and Abuses of Chocolate Coating," "How to Salt Peanuts" and "Popping Corn with Ko-Nut."

INDIA REFINING CO.

McKeen and Swanson Streets
PHILADELPHIA

Stocks Carried in All Principal Cities

“Anything You Put Out Will Be Good”

“Please send samples of your Coatsit and Firmtex. I have used Nucoa Products for years and feel sure anything you put out will be good.”

This is an actual quote — the exact wording of **one** paragraph from **one** letter from **one** big confectioner. But it is a quote in sentiment and in spirit of dozens of letters and orders from Everywhere — in the U. S. A., and from Mexico to Japan.

COATSIT

one of the new “sure to be good” Nucoa Products announced to the trade recently. After months of Laboratory tests, and months of working tests by several leading manufacturers, COATSIT was perfected for the one purpose—the making of a coating that will stand up in the hottest weather. COATSIT is not a hardener. It is not a substitute. It replaces completely Cocoa Butter and goes so far beyond that or any other product—as to actually revolutionize the industry.

COATSIT makes a coating that's as smooth as satin. Made primarily to fill the manufacturer's need for a product that will stand up however hot the weather, COATSIT will prove invaluable as an all year round product for insuring chocolate goods that will not gray, break-up or look ashy, and for perfect fudges, kisses, nougats, and caramels that will not stick, but remain firm from kettle to consumer.

FIRMTEX

the second of our new products “sure to be good” is a hardener to use in connection with other butters where an absolutely firm “set” is desired. FIRMTEX has a melting point of approximately 140 degrees F.

Send today for first hand proof that **Coatsit** and **Firmtex** are “**Good**”.

Samples are yours for the asking. Formulae direct from our laboratories will accompany samples. And our laboratory is absolutely at your service in telling you just how to use these new products and which one will best meet your needs.

THE NUCOA BUTTER CO.

Makers of the famous Nucoa Products

Nucoa Butter

Nucoline

Plastic Nucoline

Complete warehouse stocks maintained at principal distributing centers

Refinery Sales Department

297 FOURTH AVENUE

NEW YORK CITY





Announcement

AFTER continued experimental work our Service Department desires to announce to our customers that it has devised means and methods for preventing cream centers from bursting and fermenting.

Correspondence on this subject from wholesale manufacturing confectioners will be highly welcome.

THE NULOMOLINE CO.
111 WALL ST. NEW YORK, N. Y.



Acocoat Insurance

A New Form of Insurance

Life insurance is paid **after** you are dead. Fire Insurance reimburses you **after** your property is destroyed. Burglary Insurance pays for your property **after** it is stolen. Accident Insurance pays **after** you are injured.

ACOCOAT

the new insurance, **prevents** loss—insures goods from injury from **heat**—insures goods from the accident of a butter that separates in a hot store and gives chocolates a gray mildewed look—Insures the turning out of goods that are right when they leave your factory and right when they reach the consumer.

We have worked for years to perfect our two new highly specialized butters in addition to our regular butters—butters that stand up under any climatic conditions. We announced Acocoat and Acoset in September. The response of the trade proves how great was the necessity for these products.

ACOCOAT—is a butter to **replace** any butter you have been using for chocolate work, fudges, caramels, etc. It is the foundation—the fat—for your work.

ACOSET—is a hardener to be used in connection with butters that break down easily. Acoset has a melting point of 140 degrees F. and as its name implies "sets" chocolates and other delicate confections so that they stay "set."

Write us, as dozens of leading manufacturers are doing, for samples of ACOCOAT and ACOSET. We maintain a fully equipped laboratory, specializing on our vegetable fats and oils. You are invited to use the services of our chemists and practical bakers—put any of your manufacturing problems up to them.

American Cocoanut Butter Company

Makers of ACOMO, ACOMINE and MAROKO

CHICAGO
127 N. Dearborn St.

NEW YORK
297 Fourth Avenue

To insure prompt service, complete warehouse stocks are maintained at the principal distributing centers.

The Great Event of 1922

In the Confectionery Industry
will be the

National Confectionery and Associated Industries EXPOSITION

at the Coliseum, Chicago, May 22-27

National Conventions of the

National Confectioners' Association, May 24-26

Associated Retail Confectioners of the United States, May 22-24

National Jobbing Confectioners' Association

SAME WEEK

That means, everybody will be there. Many of the concerns that supply the Confectionery trade as well as Manufacturing Confectioners and Chocolate Manufacturers have already secured space at the Big Show, as will be seen from the following list as of January 31st.

Aluminum Co. of America
American Oven & Machine Co.
American Plastic Products Corp.
The Aridor Company
Atlantic Gelatine Co.
Jos. Baker Sons & Perkins Co.
Bear-Stewart Company
Bendix Paper Company
Blanke-Baer Extract & Preserving Co.
Emil J. Brach
Bucyrus Copper Kettle Wks. Co.
Candy Craft Shops, Inc.
Candy & Ice Cream
Candy Jobber
Clarke's Candies
A. M. Collins Mfg. Co.
Confectioners' Journal
Confectioners' Mercantile Agency
The Conley Foil Co.
Cordley & Hayes
Downey-Turnquist & Co.
Essex Gelatine Co.
Franklin Sugar Refining Co.
Fortune Products Co.
Gallanis Brothers

J. W. Graf & Co.
Grand Rapids Label Co.
Haug & Company, Inc.
Hobart Mfg. Co.
Hudson Mfg. Co.
Ideal Cocoa & Chocolate Co.
Improved Appliance Co.
International Confectioner
Johnston Tin Foil and Metal Co.
Kay-White Products, Inc.
Kearns-Gorsuch Bottle Co.
H. Kohnstamm & Company
Lehmaier Schwartz & Co.
Listerated Gum Corp.
Merrell-Soule Sales Corp.
Milwaukee Paper Box Co.
Milwaukee Printing Co.
National Aniline & Chem. Co.
National Licorice Co.
National Seal Company
Northwestern Confectioner
E. & A. Opler, Inc.
Henry H. Ottens Mfg. Co.
Panay Horizontal Show Jar Co.
Paramount Machinery Co.
Runkel Brothers, Inc.

F. J. Schleicher Paper Box Co.
S. E. Schonwasser Company
H. Schultz & Company
Sethness Company
Sennett-Herr Company
Harold A. Sinclair
Smith Scale Company
Snows Candy Corporation
Soda Fountain
Stadler Photographing Co.
Wm. J. Stange Co.
Swift & Company
The Candy Manufacturer Publishing Co.
Tin Decorating Co.
United Chem. & Organic Products
Vacuum Candy Machinery Co.
Voorhees Rubber Mfg. Co.
Vortex Mfg. Co.
L. Weisopf
John Werner & Sons, Inc.
White-Stokes Company
H. O. Wilbur & Son
Williamson Candy Co.

You will want to have an exhibit at the Confectionery Exposition, of course, but if you want any special location you should act quickly and write or wire the

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Announcing—

ALEX. D. HART, Jr.

Eastern Manager

The Candy Manufacturer

Mr. Hart is a graduate of Pennsylvania State College with degree of B. S.—specializing in chemistry.

For the past fifteen years Mr. Hart has been engaged in advertising and publication promotion work. He was associated with the Fairchild Publications and *The Novelty News* and is thoroughly grounded in specialized business paper journalism.

Because of his technical training and extended experience in trade journalism Mr. Hart is peculiarly fitted to serve in an editorial and promotional capacity a specialized, technical publication such as ***The Candy Manufacturer*** and his affiliation on our staff is another corner-stone—a substantial acquisition to our organization.

We invite the manufacturing interests of our industry in the east to call on Mr. Hart for any special service which is within our power to render. At least get acquainted with our

NEW YORK OFFICE

**Suite 902
107 Liberty Street**

The Candy Manufacturer Publishing Co.

Publication Office:
Stock Exchange Bldg., Chicago

Excerpts from the Address of E. K. Rice, the Retiring President of the Midland Club

At the Annual Meeting, Chicago, January 25-26, 1922

Knowledge of Costs

IN these troublesome days of readjustments, true and correct knowledge of costs are necessary. 'Tis true, this knowledge is not a panacea for our ills, nor will it immediately insure a profit. It will however be a beacon by which we can chart our course and avoid the rocks of ignorance and guess-work that would ultimately scuttle our ship on the barren shore of dismal failure.

I say knowledge of costs does not insure a profit, for such knowledge must be coupled with good judgment, but I also say, the sooner knowledge of costs on the part of all confectionery manufacturers is brought about the sooner good judgment will be used in quoting prices that will insure a profit on the sale. Do *your* part first. Get the system into your own plant and then urge and urge and keep urging until it becomes standard practice throughout the industry.

A Buyers' Market

We have passed through a period when it was easy to work together, when salesmanship and good merchandising were not required, when the demand was greater than the supply and the successful one was he who could "deliver the goods." We entered another period a year ago and we are still struggling in its grasp, a period when "delivering the goods" counts for naught; when salesmanship and good merchandising are again in the ascendancy; when the supply far exceeds the demand. A period when one's failure to sell the goods suggests our rival is underselling us; a period when we are tempted to make prices regardless of costs; a period when we feel we cannot afford and are not inclined to attend conventions or keep in touch with our competitors because we think they are not honest or fair in competition; a period when we propose to keep up our volume of tonnage in the face of general conditions and slack demand even though we lose money ourselves and by our actions cause our friends to suffer likewise.

Such thoughts, such selfishness, gentlemen, are unworthy of us as modern manufacturers and merchants, and if we persist in following such a course, and unfortunately it has been followed by some during the past year, the inevitable result will be our industry will go back to the old pre-war days, when profits for a year's business was so pitifully small that it hardly equalled the return you would have secured from government bonds.



*E. K. Rice, Pres.,
The Johnson Biscuit
Co., Sioux City, Ia.
Member Executive Committee, N. C. A.,
and Past President, The Midland Club.*

Don't misunderstand me. I am not advocating excessive profits, but I am advocating merchandising methods that will afford a reasonable profit; I am advocating the maintenance and improvement of quality; the giving of a dollar in value for every dollar received; the betterment of our service, and when these things are accomplished the establishment of a price that will return the money we have out in our goods plus a reasonable profit for risk and work.

It is a lamentable result of the great war that industrial America is equipped to manufacture commodities greatly in excess of the present consumption. The candy industry is no exception to this condition.

It is our effort to keep this excessive equipment busy that is bringing about the lack of profit. Manufacturing in excess of requirements creates a surplus stock. Efforts to move

(Continued on page 58)

Present Conditions

The Cause and the Remedy

An address delivered before the Annual Meeting of the Midland Club, January 26, 1922

by **Vincent L. Price**

President, National Candy Company



This article, like all of Mr. Price's convention addresses, is a masterpiece. It deserves the careful study of every executive in our industry.—EDITOR.

AS I see the situation within our industry there are five contributing causes of same:

1. General conditions as they affect the purchasing power of the people and especially in agricultural and mining sections.
2. Overcapacity of manufacturers, resulting from the increased capacities which developed during the war period, in connection with the establishment of new manufacturers and increased facilities of the old ones.
3. Too many jobbers.
4. Growth of retail manufacturers and distribution to consumer of products of own factories by chain stores.
5. Expense factor in cost.

Of course these causes do not affect all alike, but as I have distinctly in mind your problems and those of others similarly situated, I feel safe in attributing to these five causes the biggest share of your troubles.

As compared with the early part of the year 1921, general conditions are very considerably improved, aside from the many readjustments that have been made and will not have to be repeated. There were the low stocks in hands of manufacturers, jobbers and retailers at the beginning of the year as compared with very heavy stocks at the beginning of 1921. If these stock-on-hand conditions did not exist business would be much worse than it is.

On the basis of the consumption of basic raw materials by the industry and also from information received directly from large representative manufacturing confectioners, there is every reason to conclude that the pounds consumption of candy during the year 1921 was greater than in any previous year in the history of the industry, and yet in the face of this fact most manufacturers did not operate their factories regularly nor to a point of production that would bring about productive efficiency as to labor and overhead. This is due to large stocks carried over on January 1st, 1921, which meant that sales in the first half of 1921 were made up largely of goods produced in 1920. Also the growth of the manufacturing retailer has played a most important part in taking away from manufacturers selling the jobbing and retail trade a large share of the business which they previously secured through the non-manufacturing retailers. But most of all is the over-capacity created and started during the war period, much of which did not come into actual use until after the war. In fact, the movement toward increased capacity did not come to a stop until the fall of 1920.

There was also an enormous increase in jobbing distributors. Not only new jobbing confectioners, but concerns in many other lines of business started to job candy. Retail dealers, except syndicate and chain stores and manufacturing retailers from which the jobber gets no business, did not grow in proportion to the number of new jobbers; as a result a greater number of jobbers are supplying these retailers which naturally increases competition and lessens the business of the old-established jobbers.

The average decline in manufacturers' prices to jobbers in 1921, as compared with 1920, was 48 per cent, and in jobbers' prices to retailers 38 per cent. This meant that even if the same number of pounds were sold, sales would be less by nearly 40 per cent, and this falling off in sales met with selling and other expenses that did not decline in proportion to the decline in sales, and as a result the cost of doing business very greatly increased. The gross profit percentage on sales was reduced, which left a smaller gross profit percentage on lower sales and a higher gross expense percentage, which naturally meant either losses or much lower profits, and this was more apparent in the case of those selling the retailer than with those selling the jobber, because the latter had a better control of expenses.

The Expense Situation

As I see the expense situation in the new year, it is not going to change very much, and in the face of the competition of the over-capacity in jobbing distributors, it will be very difficult to secure a sufficient average gross profit to take care of expenses and leave a satisfactory net profit.

The expense question is a most troublesome one and will continue to be, because any man in business knows that in times like these an efficient and loyal organization is absolutely necessary to get the most there is out of business, and in reducing expenses it almost invariably involves either the breaking down of the spirit of loyalty through wage dissatisfaction or substituting the untried and inefficient for the tried and proven efficient salesman or employee.

Another thing which has quite a considerable bearing upon forecasts of 1922 results is the fact that quite contrary to the usual run of things the profits in the last six months of 1921 were less than in the first six months, and this evidences clearly that the right standard of gross profit is being, or, I might better say, has been broken down below a point that will take care of the present day expense of doing business. The history of the candy business shows that once broken down, it takes a world's war almost to get it back again.

As to manufacturers, they have, during the year 1921, without doubt had the greatest loss in labor and overhead expenses in the history of the industry, this loss representing the increase in actual cost over estimated or figured cost, and such a loss is with most a blind loss, which, however, must come out in the wash at inventory time.

Losses in bad accounts have also been excessive and these losses also are blind losses in that they are not figured in costs or as an anticipated expense.

Inventory losses during 1921 have also been taken and have added to the blind or unanticipated losses.

Eliminate Vengeance and False Theories

So far I have not told you much that you don't already know, but my object in mentioning the things I have has been to emphasize the things you are clearly up against, and in this emphasis I hope to have convinced you that it is no time for reckless, impulsive decisions and actions. There is altogether too much vengeance in competition; the desire, or at least expressed intention, to put the other fellow out of business is too prevalent to be ignored. It seems in some sections to be a controlling force and every one should stop to reflect upon the fact that when there is a general scrap every one in it is bound to get hurt.

Fear also is a dominating factor. The average man in business today believes anything of his competitors, and some, through the force of fear, even go so far as to initiate foolish price-cutting and trade practices just to beat their competitors to it. It has practically reached the state where a man doesn't run his own business any more, but lets his fear of and vengeance toward his competitor shape his policies and determine his acts.

What is the remedy. There seems to be a difference of opinion as to whether it is better to out-cut your competitor or out-sell him through better management. I think every one should stop to carefully consider whether it is wiser and better to pursue a destructive policy and lose money or pursue a constructive one and maybe make a little.

There are but two ways out of present difficulties and they are these:

The Alternatives

To wage war and wipe out the surplus capacity, manufacturing and distributing, and by such means equalize the laws of supply and demand as related to our industry;

Or to make every possible effort to secure a fair profit, maintain more sound business principles and put the losses which would be incurred in warfare into more intensive and better selling, advertising and better quality.

Both of these ways will be employed, and as I see things, the latter way will win the best and most permanent returns.

As I said before, we have over-capacity; that is, as an industry we can make more candy than the consumers will buy. If we keep on producing the maximum capacity we are going to either overstock ourselves or our customers; then business will slow up until the consumer has eaten up these surpluses. Then it will resume again, but only until such time as the market is again overstocked. During this period of production we are resorting to unprofitable prices to stimulate business, so that while we were operating we made no money. Then comes the slack period, with expenses remaining fixed, and, in fact, increased, because in these slack periods we maintain many factory

(Continued on page 64)

A Message from Walter C. Hughes



Secretary National Confectioners' Association

Excerpts from an address before the Midland Club at their annual meeting in Chicago, January 25-26, 1922.

IHAVE had the pleasure of sitting in conventions held by other industries. I will venture to say that you could take any member present and blindfold him and sit him down in a convention held by any other industry in the United States and, eliminating the basic subject matter which has to deal with a specific commodity sold by that industry, you would think that you were attending one of your own conventions. There is no difference in the basic, fundamental problems of any industry. They are practically all the same. We needn't think because we have conditions confronting us at the present time that are discouraging that we are the only industry that is affected by those conditions, because we are not. All industries are affected by present conditions, and all industries are groping around trying to find a way out.

"The Pulse of the West"

There on the Pacific Coast they have conditions that are perhaps more discouraging than they are in other sections of the United States. In Seattle and Los Angeles especially are competitive conditions keener, perhaps, than they are in any other section west of the Rocky Mountains. A survey recently was made—and I refer to this only just for a minute as I know it will be a matter of interest and perhaps a matter of encouragement to some of you who think that you have probably worse conditions to be contended with than any other sections of the country. In the City of Los Angeles a survey of the confectionery industry showed there were in that city 53 manufacturers and 83 jobbers. That will give you some idea of the competition that men there in that city and that vicinity have to contend with. The same

situation could be very nearly duplicated in Seattle.

A Constructive Convention

Are those fellows out there discouraged because of those conditions? Not at all. If you could have been present, sat there in that convention and heard them talk, you would have seen the close fellowship and intense desire to co-operate with each other; they came right out in the open and called a spade a spade. Mr. Leon Sweet, in addressing the convention on the question of co-operation, talked in very plain language. Perhaps that is the only kind of talk that really amounts to anything. I will not attempt to repeat what he said, but he would point a man out and say to him, "You know, Mr. So and So, that you reduced your price on bars the other day from \$1.10 to 90 cents. And you know that you are not going to sell one dollar's worth more of those bars by doing that, don't you?" And if the other fellow was honest he would have to admit that was the case, that he hadn't sold a dollar's worth more since he reduced his price to 90 cents than when his price was \$1.10.

Now, it is that kind of talk that bolsters the fellows up, gives them courage, and that made them feel when they got through with that convention that they had been paid for attending, because each one, when he went away from that convention, as I said a moment ago, had a steel rod for a backbone, and that is what most of us need.

Railroad and Labor Problems

Now of these fundamental problems that affect all industries and affect ours as well as the others, I think the two most important problems are the railroad and the labor problems. You men are interested in this question of

freight rates and a reduction of freight rates. You are also interested in this matter that our traffic secretary, Mr. W. C. Lindsey, has been attending to within the last ten days or two weeks. I know what the feeling is in the western territory, and I know what the feeling is, I think, in the central territory west of the Mississippi, with reference to the petition for a reduction to fourth class rate on candy and chocolate and chocolate coating.

Now it doesn't make any difference which side wins; it is manifestly impossible for both sides to win; somebody is going to be disappointed. But in my judgment that is not going to settle the reduction question by any means; neither is a general reduction in freight rates going to settle our problems. I suppose a good many of you will disagree with me, but I don't believe that a reduction in freight rates will settle any considerable number of our problems.

Now let us take just for a moment and look at the situation from the viewpoint of the railroad management. This question of a reduction in freight rates is going to be bitterly contested. We are not going to go to the Interstate Commerce Commission and say, "Please, Mr. Commission, we would like to have a reduction in freight rates," and they will say, "Well, I am glad you mentioned it; we will be glad to give it to you." The sharpest, shrewdest legal talent in the United States is already arrayed on the side of the railroads, and they are going to fight this question to the bitter end.

No doubt many of you have seen these statements that have been prepared by the railroad managers and the very convincing arguments that they have put forth as to just why it is impossible for them to make a general reduction in freight rates, ad-

mitting at the same time that a general reduction in freight rates is necessary in order that we shall go along towards what we call normal conditions.

During the period of war control, when the government took over the operation of the railroads—and there may be honest differences of opinion as to whether that was a wise policy or whether it was not a wise policy—nevertheless the seriousness of the situation undoubtedly justified that action. During the period of war control wages were increased, that is, wages to railroad employees were increased approximately 125 per cent. In other words, in 1916, dealing in round figures, as near as I can recollect them, the wages amounted to say about \$1,250,000,000, and in 1920 the wages amounted to about \$2,400,000,000.

Now what is the railroad employee's viewpoint? Well, I will tell you what his viewpoint is. He says that "If my dollar will purchase as much as it did in 1911, 1912 and 1913 when I began to work as a conductor for this railroad at \$55 a month, if you will restore the purchasing power of my dollar to what it was at that time, I will be willing, and will accept a reduction in wages, but so long as it is necessary for me to have a five-dollar bill in order to buy what that one dollar bought when my wages were \$55 a month, I am not going to stand for any reduction in wages."

It is true that the cost of living has come down to a certain extent, but not to anything like the extent to which it advanced from the point that it was during the pre-war period. Therefore, the railroad manager says, "We have to reduce the wages of the railroad employees."

I want to say right now that I haven't any sympathy with this idea of taking it out of the employee's wages. It ought to be the last place that it ought to be taken out of. You men will have no difficulty whatever in remembering a time in our industry when the wages were so low that they attracted only what you might say was the labor element that couldn't get a job anywhere else. We took what was left after the other industries had had their pick. Gradually during the war period the wages have come up to a point where now we can compete in the labor market with other industries, and in making general wage adjustments to a lower level we want to be very careful we don't get back into that same condition that we were in before, where we will be placed at a decided disadvantage with other industries in the labor market.

I have no sympathy whatever with the attitude of the labor union leaders who insist that nine dollars shall be given to a three dollar a day man, who have more in mind the question of the domination or control by the labor union than they have the welfare and interests of the individual members of their union. Until that element is absolutely eradicated from labor organizations we are never going to have anything like industrial peace.

Already, as you men know, the coal industry is preparing itself for a big strike. Now there are two reasons for that condition in the coal industry. One is because there has been a tremendous falling off in the demand for bituminous coal. These coal miners are working only a very few days per week. Now how are you going to increase the income of those miners except that you can give them full time and keep them going? The only other alternative is to increase their wages. They cannot reason these things out as you and I can reason them out. They are, for the most part, uneducated and ignorant men. They know that they need so much money in order to buy the necessities of life; they cannot discriminate as between right and wrong as to this particular thing; they can see it only from one viewpoint. They don't realize, perhaps, that there isn't anything that is half right or half wrong, that it must be either one thing or the other, it must be right or it must be wrong, and so their leaders, taking advantage of a situation by which they know they can easily influence the employees, are going to call this strike, and it will be a very serious one.

These are just a few of the conditions pertaining to the railroad situation and pertaining to the labor situation that are cause for worry, cause for apprehension, but there never was a condition anywhere in the world but what there was some way out of it, and no matter how dark and no matter how discouraging it may seem, you may be sure there is a way out, and we will find that way.

The Hardwood Lumber Case

I understand that Mr. Price this morning touched on this Hardwood Lumber Case. I was interested at the comments and questions that were made at the convention in San Diego relative to this Hardwood Case. As you know, the Western Confectioners' Association has had in operation a plan, familiar enough to most all of you, relative to the exchange of price information. Naturally, they were very much interested in knowing, or,

you might say, getting a curbstone opinion as to what effect this Hardwood decision had upon their particular method of exchanging this information. Which reminds me of what Harry Rubens replied when a man came to him and said, "Mr. Rubens, I would like to get your curbstone opinion on such and such a question; what would it be worth?" Mr. Rubens said, "It would be worth exactly what it cost, it wouldn't be worth a d—n." And I guess that is about what my opinion would be worth in connection with this Hardwood Case, but I am going to venture to give it just the same, and you fellows can see how closely it coincides with friend Price's.

It is a hazardous undertaking for anybody to assume to comment on a decision of the Supreme Court of the United States. I wouldn't do so were it not for the fact that it is clearly evident, on studying that decision, that only the issues involved in the Hardwood Case were decided by the court, nothing else.

The Supreme Court of the United States didn't decide as to the methods employed by Secretary Newman or the Western Confectioners' Association, or any other organization in the United States, comprising over 1,800 national organizations, interested in this decision. But it did say specifically, taking the facts placed before it, and judging by those facts only, it did say in effect that "You fellows who have been doing this thing in this way, in this manner, have been doing something that is illegal," and that is all the court did say; not for a moment did it say that the Eddy Open Price Competition Plan was illegal, as the announcement was sent out by a certain candy association, and I called their secretary's attention to that fact. It didn't say anything of the kind.

But it did say—and then it recited the facts—that what these fellows had been doing was illegal—and there never was a more water-tight, hide-bound, ironclad proposition with reference to controlling competition, with reference to controlling prices, with reference to controlling output, with reference to controlling everything pertaining to the business of the hardwood industry than was that plan that they had in effect, and it was no wonder at all. It seems impossible that the court could have decided any other way, even though the decision was a five to four.

And so I told those fellows out west, "You needn't be afraid so long as you are conducting business as you have been doing it; it is my opinion

(Continued on page 51)



INDUSTRIAL MANAGEMENT

A Series of articles on Production, Industrial Relations, Cost Finding and Accounting, etc., based on an experience with many of the foremost manufacturing confectioners in America.



Treatment of Overhead Expense

by **Clyde E. Murray**

Vice-President, The Stevenson Corporation

IN analyzing manufacturing costs we find three prime factors, namely, material cost, labor cost and expense (manufacturing and selling) cost.

The main classification of expenditures into these three factors is relatively simple, as most businesses carry these major accounts in their books. The complication begins when an attempt is made to make each unit of production bear its proportionate share of cost.

To arrive at the unit cost of material and labor is comparatively easy. For material cost there is, or should be, a standard batch plus and minus, as the good go through the manufacturing process, the percentage of waste, scrap, etc. It is also easily possible to figure the unit cost of labor, as there is a definite way to measure production. To allocate to each unit its share of overhead expense is much more difficult, yet even more important when we realize that the average candy factory operates with an overhead expense of from one hundred and thirty to one hundred and fifty per cent of its productive labor.

There is in use in the confectionery industry some six or seven different methods of treating overhead expense. Some of these have no logical basis and do not in any way reflect or allow the manufacturer to bring out an accurate unit cost.

It is not the intention in this article to discuss at length the various methods used and prove why they are erroneous, for when all is said and done there is only one right way of doing anything. This right way may be subject to various interpretations or perhaps refinements, but basically must be the same.

There are, however, one or two methods used which should be mentioned in passing.

First and perhaps the most glaring example of what not to do is the method of figuring manufacturing expense in relation to sales. This is so obviously wrong that it needs little comment, yet many concerns are still using the method.

Second is the method of throwing the total production of the factory in poundage or units against the total overhead and bringing out an expense cost per pound or unit. If a concern is making one article only, this method is not so far wrong. Where there is a wide line, however, it is apparent that the method is entirely wrong.

Third is the method of adding overhead expense to a combination of material and labor cost. This method furnishes an inaccurate cost, for it assesses the high material cost numbers in the line with a greater share of overhead, regardless of the labor expended on the piece or number.

These three methods are more widely used than any others, although many concerns have built up certain individual and peculiar methods of their own.

As there are many standard books written on the subject, this article will not deal exhaustively with the correct theory of overhead expense application. The writer will merely endeavor to describe and outline a system for candy manufacturers which embodies the proper fundamentals, but simplified in such a way as to provide a practical method free from unnecessary detail.

From a cost accounting point of view there are three equitable and accurate methods of ap-

FORM No 2

Form No. 3

ductive departments, according to the consumption. The consumption would be figured in a more or less arbitrary manner by figuring the amount of steam, power and heat necessary to operate the particular machine.

The Cold Storage charge, whether made or

purchased outside, is also distributed to the department according to the consumption (see form No. 8).

In considering departmental expense, charge (see form No. 9) each productive department with all its own indirect or non-productive

Form No 4

Form No. 5

Form No 6

Form No 7

EXPENSE ANALYSIS					
POWER AND HEAT	JAN.		FEB.		MAR.
	MONTH	PERIOD	MONTH	PERIOD	ETC.
LABOR					
SUPPLIES					
FUEL					
OIL					
ETC.					
 TOTAL EXPENSE					
 SHARE TO MAKING					
HARD					
NOUGAT					
CREAM					
ENROBER					
HAND-DIPPING					
PACKING					
ETC.					
 TOTAL					

labor, such as foreman, forelady, inspectors, floor girls, etc., with its share of power and heat, share of cold storage, if any, share of general overhead from the recapitulation sheet, together with taxes, insurance, rent, interest on investment, depreciation, repair labor and direct supplies making a total charge for operating the department.

This total departmental charge is then expressed either in a per cent relation to the productive labor or assessed against the active machine hours in each department and these figures added to the labor cost per unit to determine the total department cost per unit.

Under Selling Expense (see form No. 10) is
(Continued on page 63)

Form No 8

Form No. 9

The Value and Function of Bacteriological and Microscopical Analyses in the Confectionery Industry



by Dr. F. M. DuPont

Industrial Chemical Institute of Milwaukee

THIS discussion can be divided into three distinct classes, namely:

The analysis of raw materials before and after buying, the analysis during manufacture to ascertain the progress in the manufacture and to correct failures, and third, to standardize the sales product.

All the more important members of the confectionery trade should be conversant with not only all the details of the practical side of their own particular branch of the trade, but ought to possess a general knowledge of the raw materials from which their goods are prepared. Chemistry is that branch of physical science which has for its chief object the study of the composition of matter and the forces which act upon it and change its form from one into another compound.

Classification of Raw Materials

The confectioners' raw materials can be classified as:

Aerating, coloring, enriching, flavoring, moistening, shortening, sweetening and special agents.

The chief aerating and lightening materials are yeast, those chemical compounds known as chemicals or powders or baking powder and well beaten whites of eggs or egg albumin solution containing numerous globules of entangled air.

The coloring matters include vegetable, animal, mineral and a few coal-tar dyes.

The most important enriching agents is eggs, or more especially the yolks.

The flavoring substances include alcoholic and non-alcoholic beverages and essences, essential oils, spicess, fruits and fruit preparations, chocolate, almonds, salt, etc.

The moistening agents include water, milk and eggs.

The shortening bodies in general use are fats such as butter, lard, margarines, oils, neutral

and vegetable fats and the phosphorized fat in yolks.

The sweetening materials include the sugars of different kinds, chiefly sucroses, glucoses, invert sugars and even glycerine, which also attracts moisture besides.

Under the special agents may be mentioned the different kinds of flours and starches, dextrines and gums, which give body and are the base or starting point for many of the goods.

You are all familiar with these materials and know, of course, their use in your trade.

Through the cunning of their manufacturer with the help of chemists all these materials have been more or less adulterated, and where this was not possible on account of the watchful eye of the U. S. Government, compounds have been invented which are supposed to fulfill the requirements of the confectioner. Many of these compounds have been brought into existence only as a new possibility for more profit.

How have you guarded yourselves against these many possibilities of getting cheated? Many of you have, no doubt, taken steps in the right direction. The chemist is the logical man to help you. He is the man who can pry into the secrets of these complex products and help you to find the suitable raw materials and see that you actually get what you are paying for. Chemical control is needed in the purchase all along the line and it takes experience as well as study to maintain it. This would seem from what I have said before self-evident and unnecessary to say: nevertheless, I can point out utterly absurd losses in large successful organizations that are otherwise well managed, all for the lack of this needed and specialized form of control. Guaranties that are placed upon guesses are expensive.

We now step to the second class of investigations, namely, to these during manufacture. The principal constituent, we can rightfully say, is sugar. The sugar analysis, which a

generation ago was limited to the determination of density, special rotation and reducing power, has greatly expanded in the last 25 years. The great susceptibility of sugars to chemical changes have been studied and must be well kept in mind by the analyst.

The simple process of heating may change a sugar solution in a fundamental way. You are using in your industry not one but a large number of different kinds of sugars and combinations thereof and probably could use more if you knew how to handle them. Such advice can only come from a chemist familiar with this subject. If I just would want to give you a superficial idea of sugars I would have to read you volumes. I just want to mention a few points. The sugars are related to each other and it is but a small step from one to another. This can be accomplished by physical means or by chemicals. The final product is then entirely different from the one you started out with. When you come to consider the many different articles you are using in the manufacture of certain goods, it is not surprising what revolutionary action they can have on your batch. Outside of sugars you are using gums, pectins, glucosides, egg products, starch products of such a complicated nature that they even give the chemist much to think about. On account of them every manufacturer has his troubles. The man who thinks he has none has basked himself to sleep and has taken these discrepancies and troubles for routine troubles, which just happen and cannot be avoided.

Of this man I ask the question: "Have you submitted your trouble to an industrial and research chemist for investigation and study?" His answer might even be: "Yes, I sent a sample to a chemist and asked him to give me a complete analysis. I wanted to find out what was wrong. I got his report, but I could not understand it. So I sent another sample to another man and this man reported something entirely different. Now one of them was wrong, but I do not know which one. At any rate they could not help me."

This is an illustration of how it is done sometimes. The fault lies on both sides. The manufacturer should have taken the chemist into his confidence, just like he would his lawyer, given him all the details and let the chemist decide the rest. If he has not sufficient confidence in the chemist and does not give him any of his so-called secrets he cannot expect any results because some of the factors he has hidden might just be the one which contributed to the trouble. The chemist, on the other hand, should not have let the analysis go from his hand without further information. Both chemists may have turned out a correct analysis, but given it a different interpretation.

The results of an analysis can be expressed in many different ways:

In my experience I have often been asked whether I am a practical expert in this or that

line. I always deny this and claim that this is not absolutely necessary. The chemist must be absolutely conversant with that part of chemistry which enters into that particular field of research and then use his knowledge, experience and common sense and logically build up the case and arrive by systematic elimination and by analysis to the desired conclusion.

This reminds me how one day I was called by a large manufacturer of crackers who had a peculiar trouble. The crackers would bend up on the edges as soon as they were put in the oven and thereby become concave in form. This certainly was rather troublesome to him, as he could not get the required number in the box. I went with him over the whole case. I want to mention right here that I have never been in a place where they made crackers before. I followed his process, took samples in my own way, with the result that the crackers were straight in 36 hours. The man who made these crackers has had many years of experience, but he only saw what was going on on the outside and was not conversant with the chemical and bacteriological changes the dough undergoes during the whole process.

This is only one case. I could cite you hundreds of them to prove to you that an efficient chemist not only can but actually is of great help.

The idea I want to express in this talk is, the confectioner should go with his trouble to a competent chemist and treat him like he would his physician or lawyer. There has to be absolute collaboration to obtain success. It is not necessary to have batches spoiled regularly; there must be a reason. You all know how atmospheric conditions affect confection and that you have to make changes from day to day on account of the barometric pressure. It is, therefore, not hard to understand that apparently minor details in manufacture and small impurities can have great consequences. I do not feel at liberty to discuss any specific cases of your industry, because our clients expect us to keep their business secret.

The work of the chemist is not only analytic and corrective, but also constructive. The chemist can work out new ideas far quicker than the man with only practical experience. It is my firm belief that thus far science has only scratched the surface of industry. The great rewards await those who have the faith and courage to plow deep. The confectionery industry in 20 years from now will not stay behind alone.

This is not the only way the chemist may render his services to his clients. I have spoken to you about controlling the purchases by chemical examination and of controlling the manufacture and of doing research work, and now I want to say a few words about the finished product.

(Continued on page 57)

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Sugar—Its Physical Properties—VI

Mr. Murphy is one of the foremost Sugar Chemists in America. For fourteen years he was with the American Sugar Refining Company as Chief Chemist and assistant to the Chief Refiner in Boston.



Shall we reserve for you a bound volume of *The Candy Manufacturer* containing Mr. Murphy's complete serial? Price \$5.00. It will also include of course all the other serials of technical articles on schedule, any one of which is worth the price of the volume.—EDITOR.

Crystallization

The sixth of a series of articles on "The Physical Properties of Sugar," and what can be done with them to obtain any desired result in confectionery.

Exclusively for *The Candy Manufacturer*

by **Frederic W. Murphy**
Consulting Chemist and Executive

UON the physical property that sugar possesses to crystallize, the confectioner relies to produce various types of candy.

There is no type of confection made that crystallization does not play the important roll. As mentioned in previous articles confections vary from plastic to hard consistency. These results are accomplished by varying the amounts of crystallizing sugar and non-crystallizing sugars and other material. When I say non-crystallizing sugars I mean corn syrup as well as invert sugar.

A given amount of water will dissolve only a definite amount of sugar and hold the sugar in solution. Beyond that saturation point the sugar will remain in crystal form undissolved. A given quantity of hot water will dissolve a greater weight of sugar than the same volume of cold water. Upon cooling you will then have crystal sugar thrown down or out of solution.

It is customary in making a hot saturated solution of sugar to be used for crystallizing purposes to make this solution up to 37 degrees on the Be. Gage.

Rock Candy

Rock candy is merely the production of sugar crystals without agitation. The hot solution should be poured in pans and placed in a room free from all vibration and the temperature kept at 120 degrees Fahrenheit. This is one type of crystallization. I wish to particularly emphasize this point: that in this type of crystallization, which is the simplest, we have a solution of sugar almost entirely free from invert sugar. Invert sugar prevents crystallization according to the relative proportions of sugar and invert sugar. In making a hot solution of sugar for crystallizing purposes, if one

wishes clear white crystals only the highest grades of sugar should be used, such as Brilliant A or Diamond A. Then again the solution should not be boiled or subjected to heat for any great length of time, as invert sugar will be produced and consequently a smaller yield of crystals obtained.

I would call attention of manufacturers of pan goods to the reason of "swetting" of coated goods. Manufacturers of coated pills and similar goods should never keep a quantity of crystal syrup continuously heated. Invert sugar is sure to result and the coating will contain this sugar and absorb moisture from the air with consequent stickiness.

A second type of crystallization is exemplified in a fondant. In this type we have the small crystal. The invert sugar or the corn syrup prevents the crystallizing of the sugar in hard crystals, as each crystal incloses some of these non-crystallizing sugars. Then again we have the beating which breaks the crystals into thousands of smaller ones.

The Effect of Vibration

This type shows clearly the effect of vibration on crystallization. Large crystals cannot be produced unless the solution is in a room free from drafts and vibrations. I have in my laboratory one sugar crystal which measures one and one-half inches long by three-quarters of an inch wide and one-half inch thick which was produced in a room of even temperature which was free from vibration.

Hard candy is still another type of crystallization. In this type we have the small crystal formed under vibration, but with only a small percentage of non-crystallizing sugar. The result is a hard confection with crystals melted together.

Invert sugar, as stated previously, will retard crystallization. I have known confectioners who have manufactured rock candy and crystal goods to experience considerable difficulty with their crystallizing solution. Their trouble in many instances was due to invert sugar accumulated by re-heating syrup from one crystallization and adding more crystal sugar to bring the solution up to the proper Be.

This can be done a limited number of times, but each boiling produces the invert sugar so that in time the percentage is large enough to stop crystallization. The only safe way is to test the solution for invert sugar and when a certain percentage is found to turn the syrup to another purpose.

Many confectioners at times have experienced trouble with different types of goods which they have been unable to explain the cause. I have explained the influence of invert sugar on crystallization, also the part that vibration plays. Keeping in mind that all confections are of a consistency from soft to hard but all have sugar in crystal form contained in them, we now come to the influence of other materials contained in the confection.

Mineral salts and so-called "dopes" will retard crystallization, so the confectioner must assure himself when purchasing new compounds to do specific things for him that there is nothing in the product which will interfere with his formula.

Effect of Colors and Flavors on Crystallization

Flavors and colors give the manufacturing confectioner more perplexing troubles than almost anything else. Today we have on the market certified colors of aniline origin. We also have vegetable colors. The manufacturer of certified colors must of necessity receive the certificate from the United States Government before he can sell his product to the trade. His color is often purchased by another manufacturer who perhaps uses it to produce so-called pastes. The confectioner purchases this paste without knowing under what conditions it was manufactured or its ingredients. It may be acid and, if it is, will produce one result, or

it may be alkaline and, if so, will produce an entirely different result. The same is equally true of vegetable colors. One cannot be too careful in the purchase of his colors, as many batches can be lost by spoilage from this source.

In regard to flavors we have even a greater evil to guard against. There are so many manufacturers of flavors, many of whom know little about compounding or the needs of a confectioner. They are the so-called emulsions, many of which do not stay emulsified but separate; these are sometimes strongly acid, sometimes alkaline and sometimes contain unbelievable ingredients.

These all have an effect upon crystallization, which is the production of candy. In my laboratories at 101 Wall Street we have been making special investigations upon colors and flavors for the various industries and in a short time we shall publish some articles which will give new information in regard to flavors and colors for confectioners' use.

Confectioners who manufacture hard candies of the drop type, such as lime, cough drops, etc., have complained of their inability to keep their product clear. The trouble seems to be that after standing in the box or jar for a space of time a white sugary coating appears which they attribute to graining. Upon examination of several of these drops, I have found the white sugary coating was not cane sugar but dextrose from invert sugar.

Concentrated invert sugar when concentrated to contain about 16 per cent of water will in time become crystallized, and separation will take place. The crystallizing part is dextrose and the syrup part consists of levulose and dextrose. So it is with these drops, the dextrose will crystallize on the drop when there is too much invert present.

Crystallized Creams

There is still another form of trouble in crystallizing which many concerns have experienced and that is in the type of confection known as crystallized creams. Now in this type I have noted that the trouble is due to several causes:

(Continued on page 56)

Mr. Murphy's Schedule for 1922

March Issue:
FERMENTATION

April Issue:
**INTELLIGENT MANIPULATION
OF SUGAR**

(Another series of subjects will be announced in next issue)

Mr. Murphy says: "These articles are not designed to give instructions to men who have had chemical training, but for those who possess ordinary common sense, and are desirous of increasing their knowledge. I am trying to speak in a language that the layman will understand."

May Issue:
**ACTION OF SUGAR WITH
OTHER MATERIALS**



THE LABORATORY

II-Testing of Corn Syrup

The second of a series of articles on Corn Syrup

by Dr. A. P. Bryant

*Directing Chemist, Clinton Corn Syrup Refining Company
Consulting Chemist, National Confectioners' Association*

IN the previous article corn syrup has been discussed in a general way, but nothing has been said concerning its analysis.

As far as checking up corn syrup for use in the candy factory there are comparatively few tests which would have any bearing upon the subject. These are (a) gravity, (b) acidity, (c) reducing value or purity, as it is frequently called, following the terminology used in the manufacture of cane and beet sugar. These determinations can be made by any one with a little chemical training without the use of elaborate apparatus. At the same time it must be born in mind that all such tests must be made with much care in order to mean anything. In the tests described below it is presupposed that the one who makes them will have a certain amount of knowledge of chemical manipulation and that the methods given will simply serve as a guide for the purpose of obtaining the desired information quickly and accurately.

Gravity of Corn Syrup

Corn syrup is sold on the basis of gravity as measured in degrees Baume at 100 degrees Fahrenheit. As a matter of fact the gravity cannot be measured at 100 degrees because of the viscosity of the syrup at this temperature and it is necessary to heat the sample until it becomes less viscous. Heat causes liquids to expand and appear lighter and corn syrup is affected in this way, just as is water, and it is found that for every 4 degrees rise in temperature the corn syrup appears one-tenth degree Baume lighter. If the temperature is raised to 140 degrees the gravity as determined by the Baume spindle will be exactly one degree lighter than it would be at 100 degrees and two degrees lighter than it would be at 60 degrees Fahrenheit provided the gravity could be determined at these two latter temperatures. In other words, a 43-degree and a 42-degree syrup at 140 degrees Fahrenheit will show 42 degrees and 41 degrees respectively on the spindle.

Method and Equipment for Testing

The determination of gravity in syrup is a simple matter under proper conditions and with proper appliances. A special and very sensitive and accurate spindle or hydrometer is required together with a cylinder and water bath for bringing the syrup to a proper temperature. The standard hydrometer for these tests has a range between 35 or 40 and 45 degrees Baume (ask for "Syrup Standard, Modu-

lus _____"), and has the same relation to the

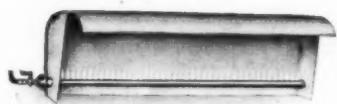
144—Be

cheap hydrometer purchased at the corner drug store and reading from zero to 50 or 70 degrees that the druggist's dispensing scale has to a track scale. A candy manufacturer once complained about the gravity of the syrup which he was receiving, stating that it was only 40 degrees. Upon investigation it was found that he was using a small inaccurate hydrometer graduated from zero to 70 degrees and was determining the gravity of the hot syrup from the candy kettle without any temperature correction. The results were worse than useless because absolutely inaccurate.

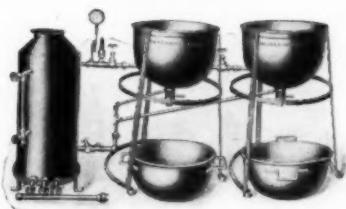
The syrup to be tested should be placed in a glass or copper cylinder about two inches in diameter and immersed in a water bath so that the level of the water is about the same as the level of the syrup in the cylinder. If gas is used to heat the water bath the cylinder should be raised from the bottom of the bath by means of a piece of perforated metal so that there is free circulation. The temperature of the bath is raised to about 150 degrees Fahrenheit and allowed to cool until the temperature of both bath and syrup is 140 degrees, at which point the spindle is immersed in the syrup and allowed to settle to a stationary point. It is well to allow a few drops of water to run down the stem of the hydrometer so as to avoid the formation of a film of syrup which might pre-

(Continued on page 39)

May We Send You Literature
ON THE ENTIRE LINE OF
CROLL'S CANDY MACHINERY?



GAS BATCH WARMER
Lined with heavy asbestos board,
\$16.50

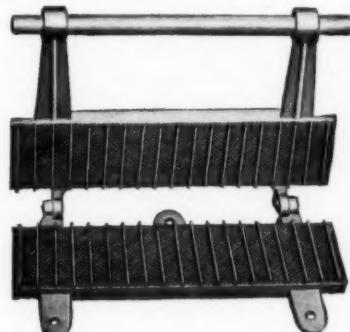


HIGH PRESSURE TUBULAR STEAM BOILER
With 3-Burner Gas Generator

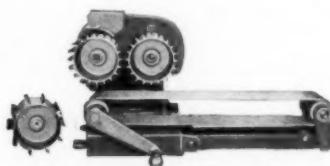
for cooking Caramels, Nougat, Fondant, Fudge, Kisses, Taffy, etc. Tested 200 lbs. pressure. Will supply enough steam for three 25-gallon steam-jacketed kettles, all working together. Can be used singly as well as in battery. Ideal for the man starting in. He just buys one outfit, and as he grows he buys an additional kettle and connects it right to the one he has, and the third to the second, etc. Saving Gas, Time, Space. Will not burn the candy.

Price, \$175.00

Prices of kettles and stands according to size.



WAFFLE CUTTER
\$27.50

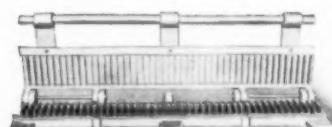


CONTINUOUS HARD CANDY CUTTING MACHINE

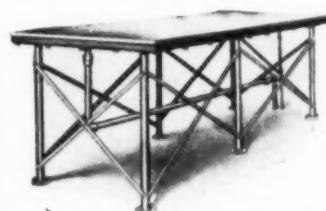
A real time saver. A man can work through a batch of Buttercups or Peach Blossoms or other hard candies in about half the time it takes doing it the old way. Instead of pulling the blades out each time a change of size is desired, all you have to do is to change the cutter rolls. Made either for hand operating or with a connected motor which can be attached directly to an electric light socket.

Price of Hand Machine with one set of rolls, \$75.00

Price per set of Extra Rolls, \$15.00
F. O. B. Bridgeport, Conn.

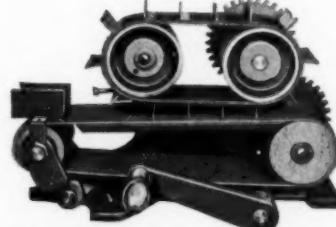


ADJUSTABLE BUTTERCUP CUTTER
32 in. long, 186 blades, \$32.50



ALL STEEL CANDY COOLER

Built to last a lifetime
One-piece body with welded corners.
Made in all sizes
Shipped complete with Stand



CONTINUOUS FLAT BASE CANDY CUTTER

For Chips, Golden rods, Honey Combs or any other flat base piece of candy.

Changeable Belts with Cutters Attached. Will cut flat base pieces from $\frac{1}{4}$ in. to 4 in. long.

This little machine will be a real saving to any man using the old-style cutters for making any size piece of candy with a flat base. Will cut most any desired length and can be speedily changed from one size to another by merely changing the cutter belt. Each machine is furnished with four changes of belts and different spaced cutters. Can be had with handle for hand power, or with direct connected motor which can be connected to an electric light socket.

Price for Hand Machine complete with Cutters, \$65.00

Price for Motor-equipped Machine complete, \$110.00
F. O. B. Bridgeport, Conn.



CROLL SUPERIOR CREAM BEATER

Belt or Motor-Driven
Made in 3, 4 and 5-foot sizes

"Croll" Cream Beaters, equipped for direct connected motor drive, make a neat, compact unit. Motors are attached directly to the bottom of the beater. This method allows less vibration, and motors are positively in line with gears.

Each machine is carefully inspected before leaving the factory and guaranteed to do the work neatly.

Three foot and 4 foot motor-drive machines are equipped with steel worm gears, running in oil, and Fabroil gears on motor shaft. This insures quiet running. Five foot machines equipped with double worm gears in oil, running noiselessly.



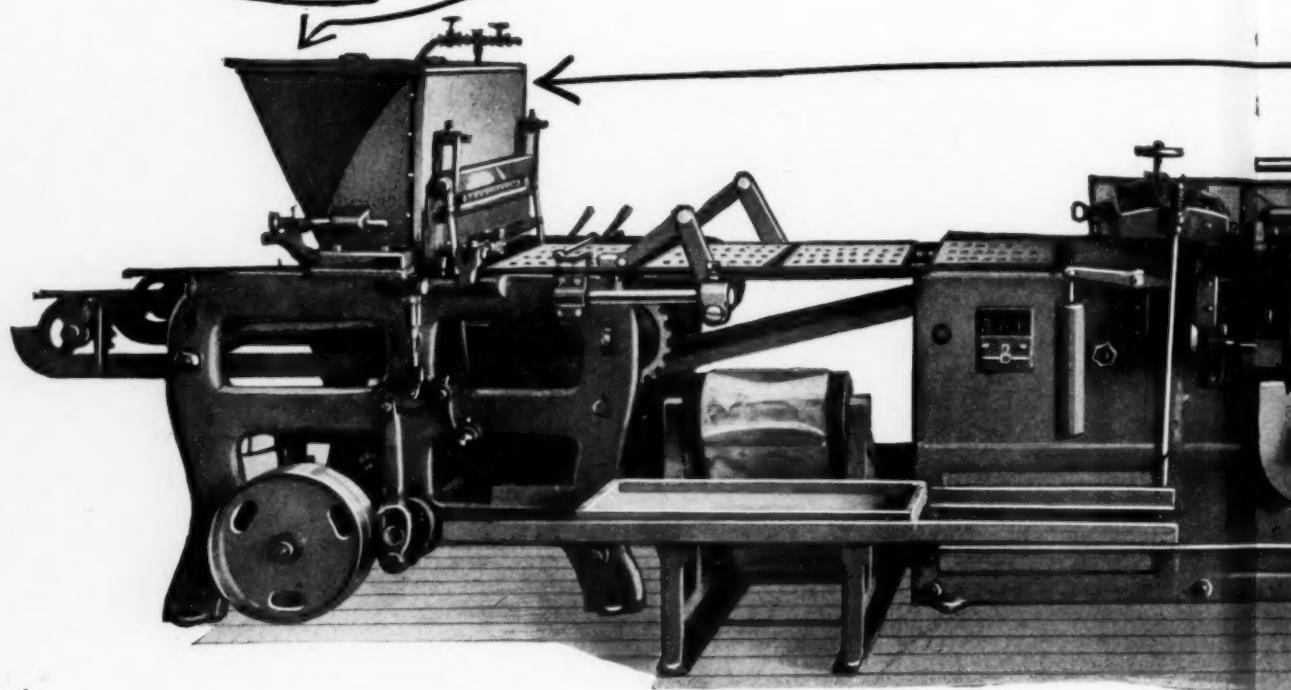
ADJUSTABLE CIRCULAR KNIFE CUTTER
We make special machinery

CROLL MANUFACTURING COMPANY
BRIDGEPORT, CONNECTICUT

Two improvements on the Steel ✓

Hopper
completely tinned
inside

For all classes of
cream to syrup



We have put a cast iron face on the hopper, buttressed it on the sides, and bolted the pump bar to it. This insures rigidity and prevents leaks.

Write for illustrated pamphlets of this and other machines.

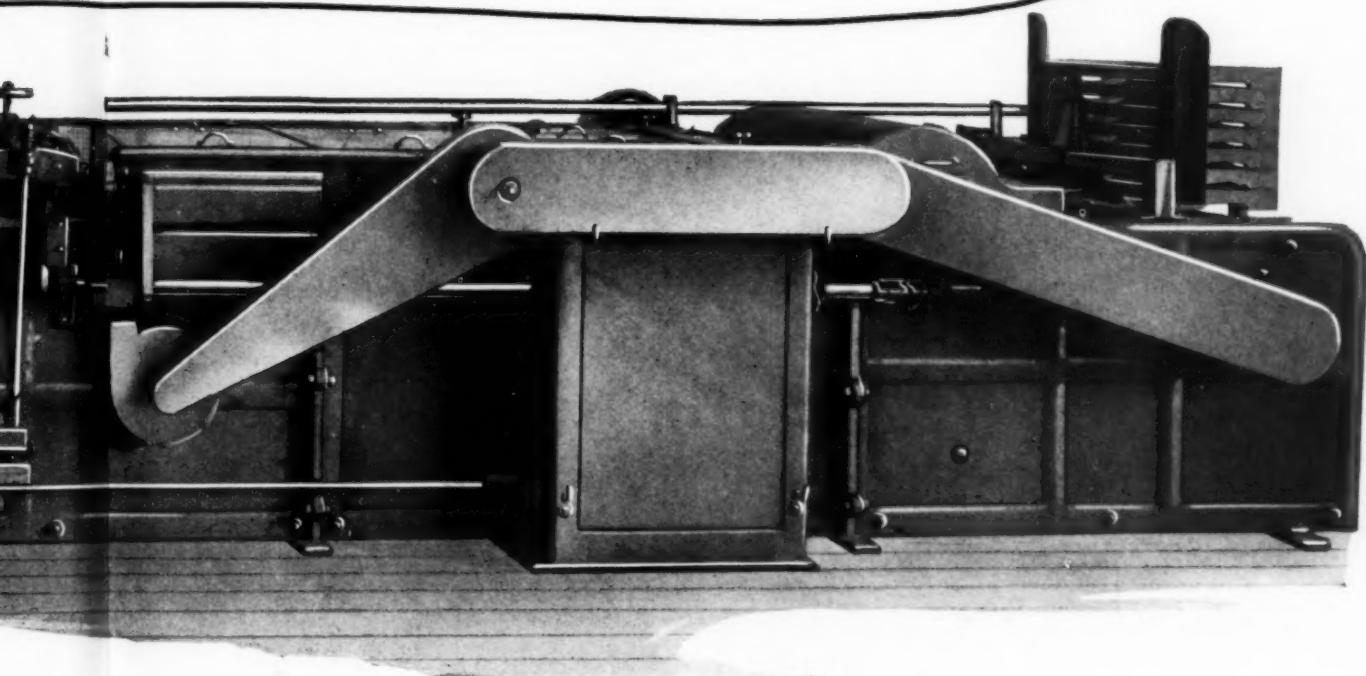
NATIONAL EQUIPMENT CO.,

Largest Manufacturer of
late Machinery in

Moqu-l-a National Equipment

asses of work from
syrup consistency

Cast iron face
—insures rigidity
—prevents leaks



The hopper is completely tinned inside, which prevents possible discoloration of fondant.

These improvements make an already splendid machine even better.

this and other machines in which you are interested.

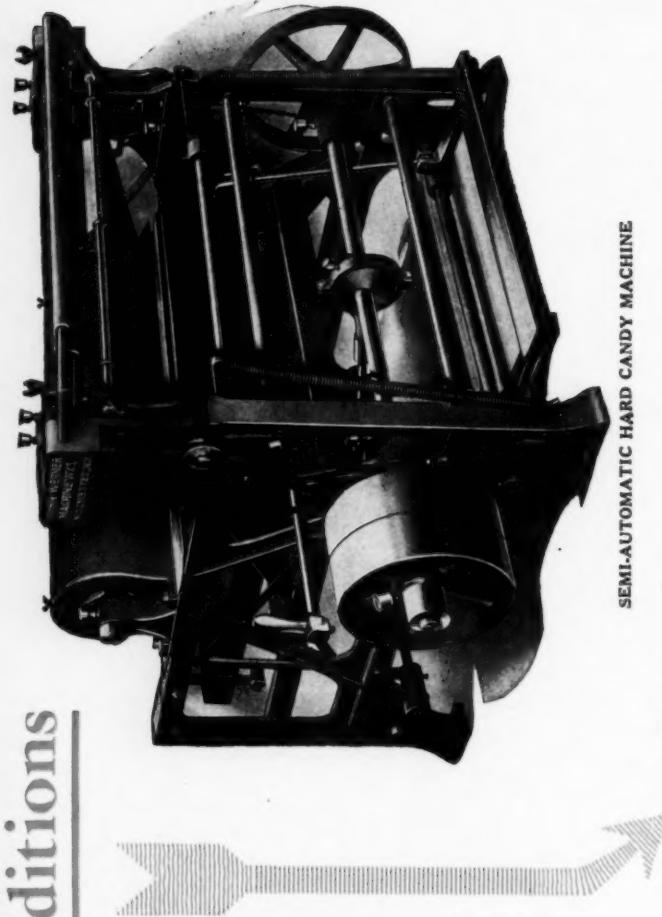
Manufacturer of Candy and Chocolate Machinery in the World

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These Two Valuable Additions

¶ "The Power Filled Goods Press" for producing Berries, Clams, Peas, Asparagus, Pineapple, Peanuts, Acorns, Leaves and other quality filled goods, that command a price with a substantial profit.

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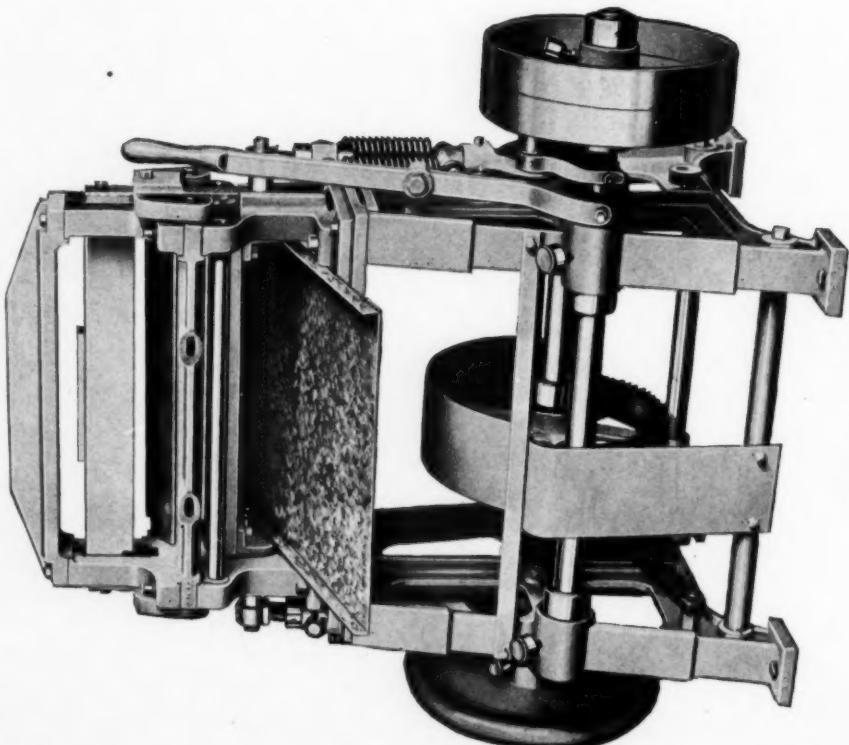


SEMI-AUTOMATIC HARD CANDY MACHINE

Will Double Your Hard Candy Profits

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"There Is a Profitable Reason"



John Werner and Sons, Inc.
713-729 Lake Avenue
Rochester, New York

II—Testing of Corn Syrup

(Continued from page 34)

vent the spindle from sinking to the proper point.

The reading is then taken and the temperature correction added. While it is best to take the reading at 140 degrees, it can be taken at a slightly higher temperature by making the proper correction, namely, one-tenth degree for every four degrees Fahrenheit; thus, supposing a syrup tests 41.8 at 148 degrees, there would

$$\frac{148 - 100}{4}$$

be a correction of —, or 12 tenths, which

$$\frac{4}{4}$$

added to 41.8 gives 43 degrees as the gravity at 100 degrees Fahrenheit. In the same way a gravity of 42.1 at 140 means 43.1 degrees at 100.

Failure to moisten the spindle with a few drops of water, as described above, may cause an error of several tenths in the observed reading, and failure to have the temperature of the syrup uniform throughout the tube may cause further inaccuracy. As stated above, the method and equipment is simple, but the test must be carried out with care.

The gravity of receipts of corn syrup should be checked up at the plant only when there is available proper apparatus and intelligent manipulation. It is well, however, to check up occasionally in order to see that the syrup is true to gravity. As a general thing corn syrup will run as close to the marked degree as the most careful manufacturing control will permit, variations being not more than one or two tenths at the most, or, to put it in another way, the moisture in the syrup will not vary more than two or three tenths of one per cent either way from normal.

Acidity and Alkalinity

There is a mistaken idea that corn syrup is or may be acid. As a matter of fact it is as nearly neutral as a material can be. Acidity and alkalinity are usually determined by color changes in certain reagents or indicators, although of late an electrical method has been devised. This latter, however, is rather complicated, and for ordinary work color tests are to be relied upon, at least for the present. If

phenolphthalein is used as an indicator corn syrup will test very slightly acid, while if methyl orange is used as an indicator it will show the syrup to be slightly alkaline. Ordinarily corn syrup will test between .015 and .025 per cent acidity, figured as acetic acid while the alkalinity of the same syrup with methyl orange will be approximately the same or a little greater, figured as sodium carbonate.

Apparatus Required

In determining acidity and alkalinity there will be required the following apparatus: two burettes graduated in tenths, a cheap scale sensitive to one-tenth of a gram with 200 grams capacity, some plain tumblers or jelly glasses and a few stirring rods; also a carefully standardized one-tenth normal acid and alkali and phenolphthalein and methyl orange indicators. The indicators are made up as follows: (a) phenolphthalein 1.5 grams, 50 per cent alcohol 100 cc.; (b) methyl orange .5 gram, 50 per cent alcohol 100 cc.

The Method

The method of procedure is as follows: For acidity, weight out 60 grams of syrup in a tumbler, dissolve in about 100 to 150 cc. hot water, add a few drops of phenolphthalein indicator and add the tenth normal alkali until the very faintest permanent pink color appears. The per cent acidity as acetic acid is the number of cc. alkali used multiplied by .01.

For example, it takes 1.8 cc. tenth normal alkali; the acidity is .018 per cent. In like manner weigh out 53 grams of syrup, dissolve in hot distilled water, add one or two drops of methyl orange indicator, titrate with one-tenth normal acid until the characteristic acid color change takes place and compute as above. For example, if 2.8 cc. of tenth normal acid were required the alkalinity is .028 per cent.

Moisture in Corn Syrup

There is a definite amount of moisture in corn syrup of any stated gravity. A 42-degree corn syrup contains 19.5 per cent moisture; a 43-degree syrup contains 17.7 per cent moisture; a 44-degree syrup, 16.1 per cent, and a 45-degree syrup, 14.5 per cent moisture. The

(Continued on page 47)

DR. BRYANT'S SCHEDULE FOR 1922

March Issue: CORN SYRUP—III.

April Issue:—INVERSION OF SUGAR

May Issue:
WATER IN CANDY MAKING

Subjects for subsequent issues will be announced May 1st

Bound volumes (12 issues) of THE CANDY MANUFACTURER containing the complete serials of the technical articles now appearing, can be had only by making reservation in advance. Price \$5.00 bound in cloth.

Color in Food

by **H. Gardner McKerrow**

ONE of the most significant indications of the advance of civilization in a nation is the degree of intelligent care with which the health of its people is safeguarded. Much of this care is necessarily exercised by local or civic control of the conditions surrounding the public welfare, but there are certain directions in which this control must be national in its character in order to be effective.

Notably is this the case in all matters regulating and controlling the purity of food products. "What is one man's food is another man's poison" must not be allowed to become an actuality through a diversification of state or municipal laws; the ultimate authority must be national.

It was the recognition of this fact which led to the passage of the Food and Drugs Act, June 30th, 1906, an act "for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes"; probably the most comprehensive and all-embracing attempt to establish a basis of purity in the manufacture and sale of food-stuffs that was ever enacted.

In the preparation of this act, it was early appreciated that there was an intimate association of chemistry with the problems of our daily diet, and it was realized that the ideal food control is no longer simply a more or less academic method of balancing proteids, carbohydrates or vitamines, but that there is a scientific cause and effect in the chemical problems which enter into the actual manufacture of practically all food products.

The Psychology of Color in Food

Among the many aspects in which these new teachings were considered was that of the use of color in food. It is universally appreciated that there is a mental value, as well as a physical value, to be derived from a correct estimation of this as a fundamental principle of nutrition, and that the appearance of an article of food is second only in importance to its chemical composition. There is thus an aesthetic value to the question of color properly used in connection with the preparation of food which lends itself to an unlimited degree of development.

Think, for instance, of the riot of color harmonies possible in a well-ordered menu inciting the appetite and leaving behind it that contentment of mind wherein we are at peace with the

world, and have realized the meaning of Macbeth's greeting, "May good digestion wait on appetite, and health on both."

Think, for instance, of the silvery sardines, the green olives, the scarlet radishes, and the white and gold of the hard-boiled egg, which we see in the hors d'oeuvres; the cool, gray tones of the oysters resting in their lustrous cradles of mother-of-pearl, and embedded in the crystal of the ice; the pale yellow of the lemon and the cardinal of the cocktail sauce.

Then the stronger tints, the old rose of the cream of tomato, or the tender green of the wind-swept grass in the springtime in the cream of spinach, followed by the bolder autumn brown and Naples green of the broiled mushrooms and peas. As the meal progresses the color tones become still more pronounced, and the crisp oven browns and whites of the roast tempt us, accompanied by the ruby of the cranberries, the garnet of the currants, and the greens and yellows of the vegetables.

Again, we return to the more delicate shades in the yellowish green or the endive or lettuce, the vermillion of the plum tomatoes and the golden yellow of the mayonnaise.

As we approach the end of the meal, and our appetite no longer needs the early stimulus, the color scheme becomes more varied and in the frozen pudding we have a combination of cream white, dotted with the scarlet of cherries and the green of pistache nuts; ice cream in a variety of shades, pink, white, yellow and chocolate, while to round out the well-balanced chromatic scale comes the silver dish heaped with purplish red grapes, golden oranges, salmon pink melons and the blushing red of the apples. After that, what is possible but the sober, reflective umber brown tints of the coffee and cigars?

In the various seasons, too, how much of our physical needs and comfort are affected by the colors afforded by our food. What is more appetizing in summer when, jaded and exhausted, we approach a meal of delicate whites, pinks and yellows found in cold salmon, cucumber and mayonnaise; while in the winter, when the system craves more hearty nourishment, we sit down to a breakfast of crisp, brown griddle cakes smothered with the liquid gold of syrup?

It must be universally admitted that food articles, therefore, when tastefully colored are more attractive than when offered in pale, indefinite tints. Whether this color is obtained by the rigors of the oven, or whether it is artificially added, the result is certainly more pleasing to the eye, more soothing to the mind,

and consequently more amenable to the activities of the digestive process than it would be if everything was a toneless drab.

The only point on which it is necessary to be certain is that the colors used should be absolutely pure. If there has been a prejudice against the use of artificial coloring matters in food, it has been based on the undoubted fact that until the passage of the Food Act, establishing a national control of such questions, there was a considerable amount of coloring matter used in the preparation of food which was not only harmful but actually dangerous.

Many vegetable coloring matters contain more or less injurious toxins which, when used in human food, may develop pathological conditions of considerable severity, and yet but little attempt was formerly made to regulate the use of these, and the mere fact that they were vegetable in their origin was understood to guarantee their harmlessness.

Under the Food and Drugs Act, ten synthetic colors were accepted by the United States Bureau of Chemistry as being pure, investigation having disclosed the fact that at no stage does any deleterious or poisonous factor enter into the process of manufacture. These, therefore, are authorized for use in the preparation of foodstuffs under the general name of Certified Food Colors, and are classified as primary shades.

The range of shades, however, yielded by these ten colors was necessarily limited and there were many avenues of food production in which they could not be used for this reason. It was, therefore, necessary, by a process of blending these primary shades, to procure a much larger and more varied assortment of colors which are known as secondary shades, and today it is possible to get almost any tint that is desired by the use of primary or secondary certified food colors. This has become so widely recognized that all manufacturers of cakes, candies, ice cream, beverages and many other branches of food production are now us-

ing these guaranteed pure colors for the purpose of giving the attractive appearance to their products, without which a large part of their value would be lost.

There is no more reason why color should not be used—provided it is pure—than that flavor should not be used, and under the aegis of the government, this situation has now been reduced to a condition of scientific exactitude which enables every manufacturer to employ these developments of chemical science in absolute security and confidence.

As an indication of the kind of coloring mediums which are now available to the manufacturer of foodstuffs, the following lists will be of interest:

In the article by Dr. Mathewson in the January issue, a list of the ten available primary colors was mentioned. From these basic colors various blends may be produced, among which are the following permitted blends, which may be had already for use from producers and dealers in certified food colors:

Permitted Blends

Bordorine (American Beauty shade)	Ceylene (raspberry shade)
Kerine (light red)	Rajah (peach shade)
Rubaline (currant shade)	Sulta (strawberry shade)
Benga (cherry shade)	Vinta (wine shade)
Rosea (rose pink shade)	Carnata (carnation pink shade)
Myrtine (Pistachio shade)	Minta (leaf shade)
Celentine (bright blue shade)	Saffirina (deep blue shade)
Noka (chocolate shade)	Rana (coffee shade)
Nutta (nut shade)	Jonquiline (cream shade)
Sitro (lemon shade)	Monga (egg shade)
Yoleone (egg shade)	Solona (dark yellow shade)
Burno (reddish orange shade)	Toku (yellow orange shade)
Coneora (royal grape shade)	Perigee (grape shade)
Plumna (plum shade)	

It will be seen from the above that there is practically every imaginable shade required for use, either in the production of high-grade confectionery or in any of the other foodstuff requirements of a strength and purity which has all the force behind it of the government guarantee.

Our readers are invited to submit their individual problems to our Technical Service Bureau. They will be handled direct or through the "Superintendent's Roundtable" or "Information Department" in the magazine.—EDITOR.



Competition at a Profit

The rewards of the application of high quality standards, known costs, team work in the organization, and sound business principles,—as exemplified in the substantial growth and success of Fred Sanders of Detroit.

Based on an Interview by Elwood Sampson with

Fred W. Sanders

Factory Manager and Grandson of Fred Sanders, the founder of the institution and originator of Ice Cream Soda.

Mr. Elwood Sampson, the author of this article is Chairman of the Public Relations Committee, National Association of Purchasing Agents, and has had many years' experience in professional purchasing. Our readers will remember Mr. Sampson's article entitled "To Make Money in Buying" published in the Fall Purchasing Number of THE CANDY MANUFACTURER, issue of September, 1921. Before preparing this article Mr. Sampson interviewed a few manufacturing confectioners and was so impressed with the outstanding virtues of the Fred Sanders business that he assigned himself to the preparation of this article.

This tribute from a man who is a prominent figure among professional buyers in the automobile and industrial field has an interesting significance—a "Rosebud" for our industry as well as for the Sanders organization.—EDITOR.

*"It is not the guns nor armament,
Nor the money they can pay,
It's the close co-operation
That makes them win the day.*

*"It is not the individual,
Nor the army as a whole,
But the everlastin' team work
Of every blooming soul."*

IF the story of the Fred Sanders' institution had to be boiled down to two sentences, the above stanzas by Rudyard Kipling expresses the spirit of loyalty and co-ordination so conspicuously manifested.

"Team work" is the foundation upon which this institution rests. "Team work" is also the body of the wonderful superstructure which has been erected. It is not merely team work of the partners and executives of the company. It is team work in a more perfect degree on the part of every worker in the institution than I have ever before seen manifested.

It is not an institution which has achieved mushroom success over night. In fact, it has been a growth of almost forty-seven years through three generations. It is now a busi-

ness of over a million dollars annually.

An Interesting Evolution

In 1875 the founder of the institution, Mr. Fred Sanders, first undertook to make candy. This was done in his own home. And, so tradition says, it was necessary for his wife to hold an umbrella over the candy cooking on the stove when it rained, as the roof leaked.

After several years the neighborhood business had grown to the point where a down-town store was established in the heart of the city. After a growth of forty years this same store in almost the original location had developed into one of the largest retail confectionery stores in the country (40 x 200 ft.) and the manufacturing establishment some eight blocks farther uptown had developed into a three-story building. In another six years the business has again doubled. The factory is now a six-story building with four retail stores. Another store has been opened as the outlet and another one is to be opened in June of this year.

During all of this development the expansion has always been in one di-



FRED W. SANDERS
of Detroit, Mich.

rection—that of increasing volume, not that of entering into new and untried fields. However, in 1875 it only required the owner's individual time to both manufacture and sell the product. Today it requires an almost perfectly co-ordinated organization of hundreds of men, women and girls to carry on the same kind of business.

The present magnitude can probably be made more concrete by considering the volume of annual purchases:

More than 1,000 tons of sugar is required. More than 250,000 pounds of chocolate is used each year. Almost 150,000 pounds of nut meats are used. This includes some 36,000 pounds of pecans; 30,000 pounds peanuts; 28,000 pounds of almonds; 25,000 pounds of walnuts; 7,000 pounds of Brazil nuts, and 10,000 to 20,000 pounds of miscellaneous nuts. 1,000,000 candy boxes and 1,250,000 bakery boxes are required each year.

A Model Organization

To visit such an institution; to look into the ways of doing business and to investigate the principles upon which the business is conducted is a liberal education for any business

man, regardless of what industry he may be interested in. You would find an astonishing exemplification of manufacturing efficiency among things that many successful manufacturers have considered "could not be done that way." To me the most interesting thing has been to compare this institution with leading institutions in the various industries with which I have been in personal contact as a professional buyer. This interest was developed into complete admiration when I found that certain ideals of business conduct and organization have actually been developed to the point where they have become a routine part of their business, whereas these things have been the hoped for goal of the leading institutions of other industries, but have seldom been demonstrated in continuous practice.

Raw Material Stockroom

The entire factory is laid out according to a carefully worked-out plan. Practically all of the raw materials are brought to the top floor and then proceed downward to the various departments via a gravity conveyor without any back-tracking or loss of time and space.

The raw material department is conducted on the same definite plan and system in use by the larger automobile and industrial plants. There is a place for each kind of material and an accurate stock record and perpetual inventory is kept. All requisitions on the stockroom are issued in exact amounts, such as one hundred pounds of sugar, not one bag of sugar. The exact amount requisitioned for is delivered by conveyor to the proper floor below.

The Machine Shop

Another feature of the top floor is the miniature machine shop with

a lathe, drill presses and equipment necessary to make practically all of the repair parts required for their machines and power units. In this machine shop they are able to repair or reproduce any broken parts in a matter of two or three hours. The monetary saving in material cost of repair parts is not very great, but the saving in productive loss of time in the manufacturing department makes this a paying department many times over.

Throughout the four floors given over entirely to manufacturing will be found the most improved types of equipment of every kind. In addition there will be found special machines worked out by the various workers and members of the organization and then built in their own machine shop. These special machines and processes would be particularly interesting because of their originality and practicability for the purpose designed. Various processes



Machine Shop—6th Floor

thoroughly about those difficulties and see if his idea can be worked out into practical application. Often a worker may think over a matter several years, studying various phases of it and then hit upon the one thing which will change it from failure to success.

Quality the First Consideration

In all of the development of labor-saving devices everyone in the organization understands that this development must never be at the sacrifice of quality. The first consideration is quality which is unvaryingly of the highest possible standard. To what extent this is carried out can best be shown by two or three concrete instances.

The nutmeats purchased are always of the best hand-picked grade. However, they found that even in the best quality which they could purchase there are certain small pieces of shell bark mixed in with the nuts. To overcome this every nutmeat is hand-picked and sufficient care taken to make sure that every piece of bark is eliminated.

The best grade of pasteurized milk and cream is used for their candies and ice cream. They found, however, that even then they did not receive the unvarying uniformity of the quality which they desire. So they put in their own pasteurizing and emulsifying plant.

In working out their various formulas the production department is never permitted to consider the cost of the various ingredients. They experiment until they find the formula which will produce the best quality of that particular kind of candy. Then that formula is standardized and continually maintained without the slightest variation of ingredients, unless further experiments produce something still better.

Sanitation

The psychological factors involved in making high grade confectionery is not overlooked. In this a constant cleanliness is the unvarying rule. A painter is on the payroll continually.



Raw Material Stock Room—6th Floor

heretofore considered necessary by hand are replaced by certain of these machines at a great saving in cost.

Every Worker Has a Proprietary Interest

All this is the result of every worker being made to feel he is a contributing factor in the success of the institution, not merely a cog with mechanical value and nothing more. The head of almost every business institution earnestly desires that this feeling shall be present throughout his organization, but so few are actually able to obtain this ideal in coordination.

It is accomplished in the Fred Sanders' institution by every worker in the organization being constantly encouraged to make suggestions, regardless of how absurd they might seem. No suggestion made is ridiculed or turned down without careful consideration. Whenever any suggestion is offered, the matter is thoroughly talked over with the worker, and the various difficulties in carrying it out are pointed out to him. Constantly he is encouraged to think



First Aid and Welfare Headquarters



Finished Product Stock Room—2nd Floor

He starts in at the top and paints until the whole plant is finished; then he starts in again at the top and so on through. Every department is being cleaned continually to keep benches, floors and machinery and all equipment scrupulously clean.

As a result, every worker is toned up to a full realization of their personal responsibilities in maintaining the high quality standard of the institution which is reflected in every piece of candy.

Every floor has its refrigeration plant so laid out and maintained at such a temperature as to keep the product of that department at just the right temperature, humidity, etc., to maintain its freshness and to prevent any deterioration.

The locker rooms, shower baths, hospital, rest rooms and every convenience for employees are all a part of the institution to maintain satisfactory surroundings and to make every employee feel that the company has a direct interest in his well being.

Waste has been reduced to a smaller percentage than I have ever seen accomplished in any other institution. A place so clean from top to bottom produces an instinctive habit in each worker to do each thing in just the right way. Nothing is thrown on the floor and no containers are kept for waste. If anything is spoiled it is kept right on the tables, checked and then taken away. No word of condemnation is spoken when some batch may be spoiled, because continuous experimenting is recognized as necessary for the growth of the institution.

One of the most remarkable things to me is that they have been able to avoid that feeling of self-satisfaction which causes an unconscious letting down. Each one in the institution is made to feel that although they are far ahead of other institutions, they must not be satisfied to let well enough alone.

Continual improvement is gained through constantly trying out some-

thing new. This is so thoroughly a part of the institution that photographs taken, not even a year ago are in many cases showing processes and equipment which have been discarded and replaced by more improved methods.

The Men Behind

As every manufacturer knows, such a splendid institution does not come from any hit or miss plan. It can only be the result of some one man or of some one group of men of outstanding ability and something more. That something more is to have a vision of the institution performing a definite service in the community life, other than merely making money and then having the faith in one's vision and the strength of purpose to stick to it regardless of all discouragements and counter influences. For this reason an article presenting the Fred Sanders' institution without setting forth the men who have made the institution would be far from complete.

"Fred Sanders" is now a co-partnership consisting of John Miller, Fred W. Sanders, and Edwin Sanders. As the founder grew older, Mr. John Miller, his son-in-law, assumed more and more the active management of the business. And he has contributed to the substantial growth and development of the institution through his devotion to the high ideals of the institution.

Eight years ago Fred W. Sanders, having just graduated from high school, then started in the stock department. He worked in every department until he gained a thorough and all-around knowledge and then entered the executive offices. He has shown ability of a very high order and now has entire charge of the manufacturing end. The continued rapid growth of the business made it necessary two years ago for him to turn over the buying to some one else. For this work a young man, Mr. Charles H. Welch, was engaged, who has rapidly developed into a very capable executive.

Mr. Charles M. Dinger, the auditor and cost accountant, has developed the cost system to a very high state of perfection in which they know at all times the cost of each department and each piece or kind of confectionery or bakery goods made by them.

In talking with everyone of the executives it was surprising to note what a thorough knowledge each one has of every phase of the business, whether it came under his particular jurisdiction or not. This is one feature which particularly stands out in the executive policy of the insti-

tution. Mr. John Miller, who now gives the major portion of his time to managing the retail end of the business spends two or three mornings each week in the various departments of the manufacturing plant. Mr. Fred W. Sanders, in charge of the factory, spends every Saturday afternoon behind the counter selling.

Every week there is a meeting of all foremen and executives. This is done because they feel that each executive can take care of his particular work much better if he knows thoroughly the work of the other departments and so plans his own work as to co-operate in every way.

With all of the thorough knowledge which each one has of every phase of the business it was rather surprising to find out how oblivious they are of their competition, even in their own city of Detroit. As Mr. Fred W. Sanders and Mr. Dinger both stated: "Our entire time, thought and attention is centered in our own institution. We are so continually striving to maintain the highest standard possible for us, that we do not find time to check up what our competitors are doing."

It is very difficult to find out much personally about the various executives of the company, as they would not talk about themselves, but only about the institution. However, the record which the institution is making under their direction speaks more strongly for the type of men they are than any biographical sketch.

The physical volume of business last year was greater than in 1920 in spite of an almost paralyzed condition of business which hit the City of Detroit perhaps harder than any other city of the country. Furthermore, this business has been conducted continuously at a profit, although their prices are almost thirty to forty cents a pound under their competitors in many cases.

They avoided the immense losses in the drop in raw material prices experienced by the majority of institutions in every industry. This was



Bakery—Since this photograph was taken a battery of 4 Ovens have been installed.

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done, because as far back as February, 1920, they foresaw the serious decline. They then inaugurated a policy of not doing any contracting whatever, but bought only for day-by-day needs. This enabled them to reduce retail prices as rapidly as the raw material market fell. They went even further and anticipated the falling raw material prices in many cases, inasmuch as they sensed the buyer's attitude with reference to the current prices.

Keeping Faith With the Public

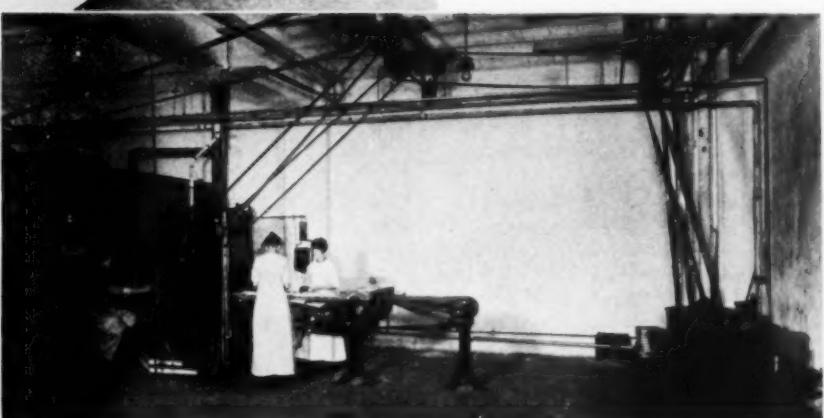
Their policy of constantly keeping faith with the public is illustrated in an incident which happened early this year. They had reduced the price on their hard candies from eighty cents to fifty cents a pound. A little later their cost record showed that they could reduce this price still further to forty cents a pound. This intention came up at the weekly meeting of the executives and department heads.

One young foreman who had just been promoted to the position, stated: "We are now selling this candy at thirty cents a pound under that charged by any other confectioner on Woodward Avenue. That being so we might just as well maintain the present price and make an additional ten cents per pound."

Immediately one of the partners spoke up and stated: "It is never our policy to consider what our competitors are doing. Our one interest is to keep faith with our customers. To do so, we always sell at as low a price as we can, regardless of what any competitor may charge."

is now in charge of the bakery division of the main store. "Dad" Lieberman, foreman of the hard candy department, has been in the candy business for over forty years, and was recently secured by Mr. Fred Sanders, because he is one of the best hard candymakers in the entire country.

There is a feeling of contentment manifested throughout the entire organization. There is a most highly developed sense of honor on the part of everyone in doing his or her part in just the right way, irrespective of any supervision. The attitude of working "with" each other for the good of the institution, not working



Third Floor—Manufacturing Department—(Two Enrobers Now in Use)

The Ideal Organization Spirit

Although the managing record of the executives during the past eighteen months has been an exceptionally admirable one, yet everyone in an executive position took particular pains to point out that the greatest credit should be given to all the various workers without whose constant co-operation their own success would have been impossible. It was a real pleasure to find how true this was throughout the entire institution. There was an entire absence of drive on the part of those in authority and of fear on the part of the individual workers.

Under these conditions the loss from labor turnover is naturally very slight. In fact, the very first assistant employed by the founder of the business is still on the pay roll. This is Wm. Deckert, who is now on a pension, and whose active place in the business is taken by his two sons, each of whom is now a manager of one of the stores.

Henry Wollenzin, the present superintendent, started in as an apprentice boy fourteen years old about twenty years ago. Theresa Ross, one of the first girls whom they employed

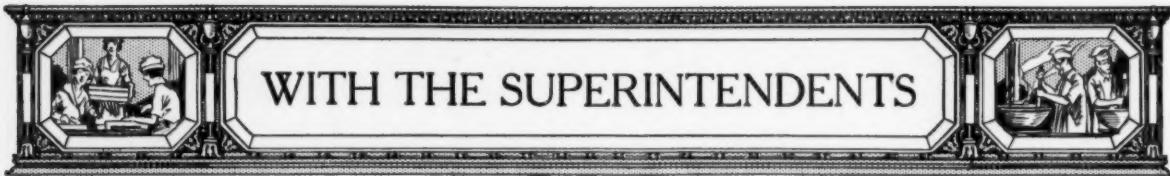
"for" the Sanders' company is very apparent.

In all this the Fred Sanders' institution has demonstrated the practicability of their utopian policies and ideals. They have never been troubled by financial losses as a result of business depression, dishonesty, incompetency or competition. They have achieved their success through the development of team work to the highest degree. This team work is obtained and maintained on the principle of absolute fairness at all times to every customer and to every worker.

Do You Want a Technical Candy School?

If so, let us have an expression of your opinions and suggestions regarding the details of a practical course of technical instruction for candy makers.





I-Stopping Leaks in the Enrober Dep't

The first of a series of articles by a successful candy factory superintendent of many years' experience. The author does not wish his name mentioned in connection with these articles, but his contributions to this department will be known by the opening and closing phrase: "Economy is the watchword."

Economy is the watchword

THE value of a correctly operated enrober department cannot be overestimated, in that if the department creates an unseen or undetected loss the manager will do quite a little thinking at the end of each inventory trying to discover where the loss of his estimated profits occurs.

The possibilities for loss in the enrober department are about as follows in dipping a mixed day's work of 9,000 pounds, using a coverage specification of 20%:

Coating melted for 5 machines a day.....	2,250 lbs.
Coating cost per lb. (average)	1.667 \$ 375.07
2% loss equals.....	7.50
Or per month of 25 days...	187.50
Or per year of 12 months..	2,250.00
A 3% coating loss for the year amounts to.....	3,375.00
A 4% coating loss for the year amounts to.....	4,500.00

Amounts well worth saving, aren't they?

The difference between applying a 2%, 3% or 4% loss of coating on a piece of goods and the correct percentage is small indeed. For instance, a bulk piece counting before dipping seventy pieces to the pound with a coating specification of 20% would finish fifty-six pieces to the pound. Suppose this piece were run with a

4% coating loss—it would then count fifty-three pieces to the pound, plus a small fraction.

A coating loss is not easily detectable unless certain controls are established to prevent over-coverage, which is a real source of loss, whether it occurs on pound or bar or count goods.

It may interest some to know how we have overcome this loss and at the same time practically eliminated dull and gray goods as well as reduced our "seconds" to a minimum.

As we did not want goods too thinly dipped and as we did not wish to resort to an oversupply of cocoa butter in our coating, the first detail to be established to prevent coating losses was to prepare two charts for the enrober department—one chart specifying the coating formula, and the other chart specifying the percentage of coating to be used on each kind or class of goods. These charts were placed at convenient points for the department heads' guidance.

Then we decided that there must be at all times in the chocolate basket under the chocolate elevator a dairy thermometer, which, of course, serves to accurately register the temperature of the chocolate—no guess work allowed.

A portable "Scale Testing Table" was the next step, and this we built 24 in. long by 24 in. wide by 32 in.

high, mounted with casters. On this table we mounted a sensitive scale with a chart reading of two pounds. Then we were ready for business, having beforehand had our printer prepare a form for us, which we use in the following manner:

The tests are taken at half-hour intervals and in doing this any loss which would ordinarily run over a longer period is stopped.

We make it a point to keep the foreman informed of any "close decisions," so he may do the necessary work to sustain production without a coating loss.

Since installing this system we have found that, apart from doing away with most troubles in the enrober department, we have been receiving from the manufacturing departments nearly 100% perfect centers, so far as the proper count per pound goes.

Our inspector, or tester, is a young woman who, apart from caring for this work acts as "Work Route Clerk," which duty is that of knowing what the department has to do from day to day, and imparting this information to the proper persons.

Economy is the watchword.

Here's a Problem for the Round Table Next Issue

Can you tell us where to get certain information relative to the making of marshmallow work, particularly that of the so-called "Moonshine" Marshmallow? What defects are present when an unusually good candy maker has difficulty in making two batches of marshmallow alike? Would following a formula for sea-level candy making affect this class of goods when made at an altitude of a mile above sea level? If you can help us out of our difficulty, we will surely reward you by asking a lot more questions.

CW-64.

Will some of our western subscribers contribute their experience for the benefit of this "troubled brother."—Editor.

ENROBER TESTING CHART						
Time	Mch.	Name	Date....., 1922.			
			Count	Centers	Finished	Weight
8:00						
	A. M.	1 O. F. Creams	70	16 ozs.	20 ozs.	87 20
		2 A. A. Rounds	77	16 ozs.	21 ozs.	90 23.8
		3 Caramels Apex	70	16 ozs.	20 ozs.	91 20
		4 Kilgren Rasp.	66	16 ozs.	23 ozs.	90 30.4
		5 M. M. Puffs	12	16 ozs.	25 ozs.	92 36
8:20						
	A. M.	1 Jumbo Juniors	12	16 ozs.	20 ozs.	89 20
		2 O. F. Chips	160	16 ozs.	26 ozs.	88 38.47
		3 Caramels Apex	70	16 ozs.	21 ozs.	90 23.8
		4 Kilgren Rasp.	66	16 ozs.	22 ozs.	89 27.27
		5 M. M. Puffs	12	16 ozs.	24 ozs.	91 33.33

Testing of Corn Syrup

(Continued from page 39)

gravity generally preferred by the confectioner is 43 degrees, although 42-degree syrup is frequently used. Where it is desired to shift from one gravity to another with greatest accuracy, this can be done by comparison of dry matter. For instance, 100 lbs. of 43-degree syrup would contain 82.3 lbs. dry matter and 100 lbs. of 42-degree syrup would contain 80.5 lbs. dry matter; consequently it would require a trifle more of the latter to give the same dry matter, the exact amount being found by dividing 82.3 by 80.5 and multiplying by 100, giving 102 lbs. and 2 ounces of 42-degree syrup to give the same dry matter as 100 lbs. of 43-degree syrup.

It is unnecessary in examining corn syrup to determine moisture because the gravity, determined as already described, gives much quicker and more accurate information; indeed, it is quite difficult to dry syrup, molasses, etc., and get accurate moisture content except under the most carefully controlled conditions.

Reducing Sugars in Corn Syrup

These are best determined by the volumetric method, using a Fehling solution of known strength. The results which will be obtained will be reported as glucose (dextrose), although it is known there is a certain amount of maltose present. The determination of exact amounts of maltose in the presence of glucose (dextrose) is difficult and really has no bearing upon the action of the syrup because the amount of maltose will not vary materially and is relatively small. The reagents which will be required are as follows: Fehling solution: (a) dissolve 71 grams C. P. copper sulphate in one liter distilled water; (b) dissolve 346 grams rochelle salts and 100 grams caustic soda in one liter distilled water; these two solutions are to be kept separate and mixed in equal volumes previous to use.

Apparatus

A 5 cc. and a 25 cc. pipette, a 25 cc. burette graduated in tenths, a 200 cc. flask, a 100 cc. volumetric sugar flask, Bunson burner, a test plate, a clamp for holding the flask while heating, glass cylinder 2 in. diameter and 12 in. long, brix spindle reading from 30 to 40 in tenths, thermometer (Centigrade).

Standardization of the Fehling Solution

This should be made by means of pure dextrose such as can be purchased at the Bureau of Standards, Washington, D. C. Weigh out one gram and dilute to 100 cc., 1 cc. contains .01 gram dextrose. Approximate results can be obtained by taking 4.7 grams pure sucrose, 75 cc. water and 5 cc. hydrochloric acid, Spg. 1.2. Let the mixture stand twenty-four hours at room temperature, neutralize the acid and dilute to 500 cc. One cc. of this solution is

equivalent to .01 gram dextrose in reducing power.

Procedure

Take 25 cc. of the mixed Fehling solution in the 200 cc. flask, allowing the pipette to drain against the neck of flask; bring to a boil; fill the 25 cc. burette with the standardizing solution and add about 12 cc. to the hot Fehling solution; boil for about 1½ minutes; allow to settle for a few seconds, and if there is any trace of blue color left, add more of the standard solution. When the blue color has entirely disappeared, test for copper by pouring a little of the solution into a 5.5 cm. folded filter paper (held preferably by a pair of horn tipped forceps) and collect a few drops of the filtered solution on a test plate; add a few drops acetic acid (1 to 1) and one drop potassium ferrocyanide solution (1 to 20). If a brownish-red test for copper is obtained, add a little more of the sugar solution, bring to a boil and repeat, continuing until no test for copper is obtained. Repeat the test, adding to within two-tenths cc. of the amount that gave no copper in the preliminary test; boil exactly two minutes and test for copper as before, adding further amounts of the sugar solution until the point is determined where the copper has been completely removed. If the Fehling solution is standard, it should take exactly 12.5 cc. of the standard sugar solution to do this. (Compare Official Methods of Analysis of the Association of Official Agricultural Chemists, VIII, 19, 20, 21 and 23.)

If less than 12.5 cc. or more than 12.5 cc. of the standard sugar solution were required, the Fehling solution should be corrected by adding a little copper sulphate or a little water respectively until exactly 12.5 cc. of the standard one per cent dextrose solution is required to completely throw down the copper from 25 cc. Fehling solution.

Having standardized the reagents, the analysis of the corn syrup can be made as follows: Add water until the syrup solution is approximately 34 degrees Brix, noting the exact temperature Centigrade. Take 5 cc. of this solution and dilute to 100 cc. in the volumetric sugar flask and determine the number of cc. required to exactly throw down all of the copper in 25 cc. of the Fehling solution. The computation of the per cent of reducing sugars as glucose or dextrose is as follows: From a brix table, such as is given in Browne's "Handbook of Sugar Analysis" or Spencer's "Handbook for Cane Sugar Manufacturers" or any Sugar Manual, find the "corrected brix" which is the per cent total dry matter by weight. Find from the table the specific gravity corresponding to the observed brix, and multiply it by five (the number of cc. used) to get the total weight which was diluted to 100 cc. This value multiplied by the corrected brix (expressed as per-

(Continued on page 63)

Superintendents' Roundtable

Each month a problem received from a subscriber will be submitted to our readers for open discussion. There is much valuable information on candy making and manufacturing problems which should be brought out in the open and we are depending on the superintendents and practical men of the candy factories to take an active part in this department—Editor.

This Month's Problem and Four Answers on the Subject of Handling Chocolate for Enrober Work.

Will you kindly give us the following information regarding the handling of chocolate for enrober? We would appreciate a direct reply, rather than a reply published in answer to our query in your magazine.

Quite often the chocolate on goods run through the enrober turns gray, even though our cooling room is as low as 55 degrees. The chocolate, when put into the enrober, is between 89 and 92 degrees. We use the best chocolate: _____, _____, _____. We have two mixers. We both melt and temper the chocolate for the enrober in one mixer, using the second mixer for chocolate for our hand-dippers. We are unable to account for the chocolate turning gray, and we thought that could you give us instructions as to the handling of chocolate, from melting to drying, we could discover some reason for our trouble, and some remedy for it.

We subscribe for your excellent magazine, and will appreciate very greatly whatever information you can give us.

WB-210.

No. 1

With reference to your letter of the 9th, enclosing an inquiry from regarding chocolate coatings, wish to say that chocolate should be melted at a fairly low temperature, not to exceed 115 degrees and should be thoroughly mixed. The coating then should be brought down to a dipping temperature of 86 or 88 degrees. I believe Mr. makes a mistake when he dips his coating as high as 92. That would account for his difficulty.

After the chocolate has been dipped in the enrober at the temperature of 86 or 88, it should be cooled in a room between 60 and 65 degrees. Sixty degrees is an ideal temperature. If the room is too hot, it would have a tendency to make the chocolate streak. If the coating was too hot when dipped, it would have a tendency to streak the goods also. If the centers were not the proper temperature, bad results would be secured. The centers dipped should be the temperature of the room, about 70 degrees or 75. Too cold centers or too hot centers will give streaky results, and if the centers are cold, the chocolate dries from the inside instead of from the outside, and the results are bad.

If Mr. would bear in mind the following points, there is no reason why he should not secure good results:

1. The chocolate is not to be over results: (1) The chocolate is not to

be overheated. (2) It should be dipped between 86 and 88. (3) Cooled in a room around 60. (4) The centers should be just tepid, not hot and not cold.

I believe if our fellow reader will act on these suggestions better results will be secured.

A SUBSCRIBER.

No. 2

We believe that chocolate should not be dipped at a temperature higher than 89 degrees Fahrenheit. He states that they dip their chocolate between 89 and 92 degrees. If chocolate is dipped at 92 degrees, he will discover that the covering is more or less streaked, but these streaks will show red and not gray. If he dips his chocolate below 86 degrees, he will develop gray streaks and it will run quite heavy and mushy at this temperature. Chocolate can be dipped as high as 91 degrees Fahrenheit and obtain a very high gloss, but his cool room must be much lower than 55 degrees, so that the chocolate would dry and harden exceptionally quick. If he dips at 91 degrees and his room is 55 degrees, the chocolate will dry much slower and thereby become streaky and more or less porous.

If he were to make a test at this time of the year—let us say that he dipped chocolate at 91 degrees and he cools some in his regular cool room and some outside where the temperature is around 32 degrees—he will

find that the chocolate that he put outside in the colder temperature would be of a high gloss compared to the chocolate in his cool room. If his chocolate is pure, dipping at 89 degrees with a 55-degree temperature in his cool room, there should be no difficulty in getting a very high gloss and fine color on same. Of course, this means that the chocolates should be sent directly from enrober to cool room without standing in dipping room, which no doubt he does.

A FACTORY MANAGER.

No. 3

Replying to your favor regarding inquiry you received from we are led to believe that the trouble they are experiencing is due to the fact that they are overheating the chocolate when first melting it down.

It may be possible that they are using steam jacketed kettles instead of hot water, and if they are doing this, it is oftentimes the case that the steam is too severe at the start and it will separate the cocoa butter from the chocolate. If they are using the hot water jacketed kettles and are keeping the proper temperature, the trouble may be due to the fact that they are running their cooling room too low in temperature, as they stated in their letter to you that their cooling room is 55 degrees, and 65 degrees is ample low for setting chocolate. The sudden change from hot to low temperature will oftentimes turn

chocolate gray or, as stated before, overheating the chocolate will also have the same effect.

A CHOCOLATE SALESMAN.

No. 4

We note that Mr. has trouble with his enrober, and wish to inform you that his trouble is entirely due to the temperatures at which he dips his chocolate. The chocolate when put in the enrober should not be any higher than 88 degrees. It may be as low as 86 degrees, at which temperature it doesn't run any heavier than at 88 or 90 or 92.

He states in his letter that the temperature in his cooling room is as low as 55 degrees, which is the correct

temperature, if it can be maintained. Under no conditions should it be any higher than 60 degrees. He must see to it that the air in the cooling room is not saturated with moisture. It should be perfectly dry, which can easily be obtained by opening the windows from the top during night time.

The chocolate, if dipped in conformity with the above information, should be glossy and should not turn gray. This, however, is under the supposition that he does not mix any cocoa butter substitutes with his coatings. The chocolate for enrober work should contain from 36 to 38 per cent of butter, and as most brands, especially the better grades, are supplied by manufacturers for hand dipping,

he may have to add about 2 pounds of cocoa butter to 100 pounds of coating chocolate to make it thin enough for enrober work.

We do not wish to close this letter without saying a few words about milk chocolate coatings. Any milk chocolate should not be exposed, either in melting or any other time, to a temperature exceeding 105 degrees. In other words, milk chocolate should be melted slowly. What time you waste in melting milk chocolate you will save again in reducing the temperature to the proper degree for dipping. If milk chocolate is overheated, it becomes pasty, and while it can be thinned out again with cocoa butter, it will never regain its gloss.

A MANUFACTURER.

Another Troubled Brother Has His Difficulties With Coatings.

I am sending by parcel post a box of samples of chocolate coated goods made by me. I am having trouble with the coating I use; you will notice it is gray or rather mold-like in appearance, some pieces in spots, some all over, some not at all.

This happens the next day at times, then again they may hold up for two weeks or more. Some pieces do not get it on in the same package when packed.

This chocolate mixture is made as follows: 20 lbs. hard fat, 40 lbs. cocoanut butter, 75 lbs. chocolate liquor, 150 lbs. sugar, and vanilla for flavor melted and added in order named. It is agitated for two days, then run on enrober at 120 degrees; at a lower temperature it sets in the enrober. Do you think this mixture can be made so as not to turn mold-like.

I understand that large baking plants in the middle-west use this mixture for coating their goods and run it at 130 degrees on enrober.

Any information you can give me will be greatly appreciated.

616-Md. **Who will handle this one?**

Here's a Problem—A Very Timely One—for Next Month's Roundtable:

Can you and will you kindly help me out? Under separate cover I am sending you two samples of crystallized creams. The hearts were made 40 lbs. sugar, 10 lbs. corn syrup, cook 248 degrees—25 lbs. bon bon cream, made 100 lbs. sugar, 25 lbs. corn syrup, cook 240 degrees crystal—brilliant H. sugar, 232 degrees Baume. Why does this crystal blister?

The maple bon bons were made all sugar and cream of tartar, 248 degrees, 30 per cent same bon bon cream cast in rubber molds. Hearts were cast in starch. Crystal same sugar cooked 233½ degrees Baume. The pink and white came out nice; the maple was badly spotted with heavy grainy spots, the darker the color of bon bons the heavier the grain.

If I crystallize white, pink, maple and chocolate colored bon bons in separate pans with the same crystal, the white and pink come out fine, the maple shows some grain and the chocolate colored one will be very grainy. I cannot explain this nor can any of the candy men whom I have asked.

Will Mr. Murphy's coming article on crystallization set us right on these points? I have been bothered with this trouble since the hot weather last summer. I have changed makes of sugar, percentages of sugar and corn syrup, changed temperatures of cooking, but still the trouble will develop in from two days to two weeks. Some of our competitors have the same trouble, but that don't help me.

222-Minn.

Let's hear from a number of superintendents on this problem with comments on Dr. Murphy's article in this issue.

Perhaps you have a problem you would like to submit to "The Roundtable" for open discussion. Send it in, please, with full particulars—Editor.

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OZONE-VANILLIN

PURER, SURER THAN THE BEAN

A Message from Walter Hughes

(Continued from page 25)

that you are well within your legal rights."

The Beechnut Case

There is another case that was decided by the Supreme Court, called the Beechnut Case, and, as in the Hardwood Case, the court decided only the actual issues before it. In other words, it decided the Beechnut Case; it didn't decide the case of Armour & Company, or Swift & Company, or any candy manufacturer, or anything of that kind; it simply decided that case which was before it.

The court went on to say that in the Beechnut Case, where they had a very comprehensive system of keeping tab, not alone of their customers, but their customers' customers, the dealers and the dealers' customers, as to whether or not these firms sold their products or any others at anything except the listed price; in other words, whether they were price cutters. So they could take and thumb over their card index on which were symbols whereby John Smith would be listed as a "P. C.," "price cutter," or a "D. B.," "dead beat," and so on. They marked their packages so they could tell whether or not they got into the hands of price cutters, and followed them all the way through. In other words, it was so complete a scheme that it was very evident that they could follow that thing through to its finality and cut off any man anywhere along the line, anyone that was selling their products for less than the listed price; and so the Supreme Court said to them, "Boys, we don't like that way of doing business, that is not legal, you are wrong; you will have to cut that out."

The Method—That's the Rub

But the Supreme Court didn't say that a manufacturer may not designate the price at which his product shall be sold. Now, for example, if I am a manufacturer and Newman here is a price cutter, I can refuse to sell Newman; I can say to him, "I am sorry, but I cannot accept your order." I don't have to give Newman any reason why. I don't have to assign any reason whatever in refusing to sell him.

But some of the manufacturers asked me out at the western convention, "Well, now, how are we going to do this thing?" I said, "Well, now, there is the danger in the situation—your *method* of doing it." After reading the decision of the Supreme Court in this particular case, if I were a manufacturer I would have no hesitation whatever in designating the price at which my pack-

age goods, for example, should be sold by the retailers. I think that I would have no difficulty whatever in finding an excuse to cut off some dealer who didn't maintain that price, and I think that I would be perfectly justified and well within my legal rights in doing so.

But now, boys, just remember what I said about a curbstone opinion, so if any of you are going to elaborate any on this scheme of refusing to sell dealers because they don't maintain your prices, you had better consult a real good lawyer before you decide on the plan that you are going to adopt.

The Excise Tax

Now Mr. Rice referred to the excise tax. I suppose some of you may think that all of the tax should have been eliminated. Yes, it might have been eliminated if conditions in Washington had been different from what they were. There is no doubt whatever, so far as that is concerned, but that when we come to view the facts relative to this question of taxation most any of us will admit that the present form of taxation—I mean the 1921 Revenue Act—is far from being satisfactory; it is no better than its predecessor, and its predecessor was bad enough, goodness knows. But there is no form of taxation that can be devised by human minds that will be satisfactory to everybody.

Now the question is, what form of taxation can be devised that offers the least objections and at the same time will bring the government in the requisite amount of revenue? A great many of us seem to think that the U. S. Government is some mysterious sort of thing that all it has to do is to set the printing presses to going and that solves all of our many problems. The tremendous increase in paper currency during the war period and since the war is simply appalling in various countries of the world.

There is only one way that you can pay your debts, and that is to be economical, to be thrifty and to save money; take out of your income a sufficient amount to pay your debts. The government cannot pay its debts except by you and you paying taxes with which the government can take the money and pay its debts. There is no mysterious way in which Uncle Sam, for that matter, can get money; it must come from the taxpayers of the country.

A great many people fail to recognize the difference between what is real money and what is merely a promise to pay or paper currency. Out West those fellows don't feel as though they have any money at all unless they have a whole pocketful of silver dollars.

Money is merely a measure, that is all. So that a dollar bill merely measures a dollar's worth of something else. So that instead of taking something that I have produced and exchanging it for something that you manufacture, I can use this little medium here and I can carry it around in my pocket; then I will take it over and buy what I want with it.

Our Strongest Argument

Now these taxes that the government is trying to collect are burdensome on many industries, and we, of course, feel that they are especially burdensome on our industry, and we feel as though it is unfair for the government to exact an excise tax from an industry making a food product when other manufacturers who make similar products that come into direct competition are not taxed, and that, in my judgment, is the strongest argument, the only logical argument, that we have ever had to advance as to why the tax should be repealed.

This question of it being a burden on the industry, and that we cannot pass it on to the other fellow, and all that sort of thing never had very much weight with Congress.

A Macaroni vs. a Steel Backbone

We have learned a lot from past experience. The plan that we adopted during the last campaign was all right. The tax was reduced from five to three per cent. It will save the industry several million dollars, if you don't give it away to your customers. And, by the way, the other day I had a funny experience. A local manufacturer called me up and asked me, "Hughes, what would you do in a case of this kind? Do you know some of our customers are taking off an additional two per cent because the candy excise tax has been reduced from five to three per cent? What would you do?" "Well," I said, "I know what I would do." "Well," he said, "we have had a good many instances of that kind, and some of them are pretty valuable customers." I said, "What did you do?" "Well," he said, "in some cases we allowed it." There is another instance of macaroni instead of a steel rod for a backbone.

When we come to the time when this 1921 Revenue Act is going to be revised—and the ink was hardly dry on the bill as it was printed in the Government Printing Office before down there in Washington they began to talk about revising that bill—they knew full well that it was not satisfactory, but an immediate consideration of a revision would be a repudiation of what they have al-

(Continued on page 54)

The Sugar Situation



by **Dwight O. Palmer**

ASK OUR SUGAR EDITOR!—Are you reading Mr. Palmer's report on "The Sugar Situation" each month regularly? If not you are missing something valuable—a boiled-down, authoritative review and forecast of the sugar markets.

Mr. Palmer is well qualified as an expert on the sugar situation, having specialized for years in representing foreign and domestic sugar manufacturers and refiners. Our readers are at liberty to consult this department. Communicate through our publishing office or direct to Mr. Palmer at 160 Pearl street, New York City.—EDITOR.

THE sugar situation as it appears today is more stabilized and is on a firmer foundation than it has been since the advent of Government Controls during war times. Sugar is at last free from "emergency created" controlling influences and has demonstrated its ability to reach its proper level, in accordance with natural laws, as well as its ability to recover its economic position in a shorter space of time than perhaps any other commodity. As we approached the end of 1921 a readjustment of sugar conditions had already begun, in anticipation of decontrol of Cuba sugars on December 31st, with large abnormal stocks carried over into the new year and grinding of the new crop already commenced. Prices were on the downward trend and many were the direful predictions for sugar during the coming weeks of free trading.

The Cuban Decree of Decontrol

However, the expected decree of decontrol was signed and issued by President Zayas of Cuba on December 21st, effective December 31st, and immediately sellers and buyers knew to a great extent what was immediately before them, though the extent of the move in sugar could not be gauged at that time. Sellers immediately began to offer their released stocks, but at no time in heavier volume than the market could absorb, good sales being made at each successive decline, and December 28th recorded the low price of 1 $\frac{3}{4}$ c C & F New York for Cuba sugars, where it

remained but two days. Resistance on the part of sellers (the weak holders being fairly well eliminated on the way down), and the prospects of a delayed new crop, augmented by the low price of the article and bareness of supplies throughout consuming countries, stimulated buying in large quantities both here and abroad, so that the situation recovered more quickly than anyone anticipated and a tremendous quantity of old stocks were moved, thereby furnishing funds for new operations.

Review of Prices

Prices recovered from 1 $\frac{3}{4}$ c C & F for Cubas to 2 $\frac{1}{8}$ c C & F on January 23rd for forward sugars and 2 $\frac{3}{8}$ c C & F for prompt sugars, where the market remained steady, easing off gradually in a few days to 2 $\frac{1}{8}$ c C & F, between which and 2 $\frac{1}{8}$ c C & F the market has mildly fluctuated with a very good business doing from day to day. Refined sugar prices also advanced to 5.10c, later reacting to 5c.

Ideal Situation for Buyers

The expected worst period of readjustment has come and gone. It was not as dangerous as expected and the recovery has been most gratifying. Sugar is on its own natural basis again and, while the price is low, costs of new sugars have been adjusted to the new level, and with the outlook of production and consumption for the balance of 1922, only moderate fluctuations are expected and no material rise in prices is expected until perhaps late in the year, depending on the year's operations.

Liquidation of old stocks is still in progress, but stocks of old crop Cubas particularly have been reduced to approximately 300,000 tons unsold and are not sufficient to cause anxiety, considering what has already been accomplished in sugar selling and distribution since late December and the continued steady position of new crop sugars.

The situation must be gratifying to buyers, particularly as the price of sugar is low, the losses on market fluctuations are minimized and the outlook is encouraging because of the elimination of past wild speculation and false control features.

Sugar Consumption in 1921

It might not be amiss at this time to mention the United States consumption figures for 1921. According to the U. S. Department of Commerce it was 4,266,775 tons, a per capita consumption of over 90 pounds, compared with 4,058,244 tons for 1920 and 4,126,673 tons for 1919. According to Willett & Gray the consumption for 1921 was 4,107,328 tons of 2,240 pounds each, or a per capita consumption of 84.47 pounds. Of this quantity 2,214,446 tons was domestic and island possession production, 1,866,153 tons Cuban imports and from foreign countries 26,929 tons.

According to the same authority the estimated total world production of cane and beet sugar for 1922 is 16,471,967 tons, or a decrease of 101,077 tons from 1921 outturn. This would demonstrate the confidence of producers in the world's ability to

consume at least as much sugar as it did in 1921, and it is reasonable to assume that the consumption will be greater than in 1921. Statistics point to a well-balanced supply and demand for 1922. Present estimates at a time of lowest values indicates sufficient supplies, the accuracy of which will be determined in the future course of prices. The article being uncontrolled as far as the United States is concerned assures the natural flow of sugar according to supply and demand and only moderate fluctuations are expected and no material advance in values until possibly during the latter part of 1922.

There has been an exceptionally large distribution of sugar during January and it is not yet completed on purchases made during last month. Both Europe and the U. S. purchased an exceptionally large quantity at the low price levels prevailing early in the month, buying both on the downward and upward trends. Much of this is for February delivery. This large movement of sugar proves that the world knows the value of sugar under all and varying conditions and that the replenishing of supplies only awaited the proper discontinuance of false conditions and a readjustment of prices according to actual supplies. Buyers now have more confidence in the future and will not hesitate on heavy commitments as heretofore.

The Cuban Crop

The present Cuba crop has been slow in getting under way, owing to many adverse conditions confronting the producing interests during the past few months, but the situation has rapidly cleared up to a considerable extent, so that the unsold portion of old crop Cubas is now estimated at not over 300,000 tons, not a dangerous economic feature considering conditions as they were a little over a month ago. Financial conditions are improving for the producer, allowing additional Centrals to commence grinding operations. Total number of Cuban Centrals working on February 6th were 139, against 164 last year and 184 the year previous. Production is considerably behind the corresponding dates of the three previous years, as is natural, following above-mentioned adverse conditions. Willett & Gray estimate the present Cuba crop at 3,500,000 tons, indicating very little final curtailment of the crop.

Look with Confidence on 1922

A continued good demand is looked for from Europe and the U. S. and an active year in sugar is anticipated. Domestic manufacturers and consum-

ers may look with confidence toward the balance of the year with an assurance of supplies at reasonable prices, with wide and dangerous price fluctuations eliminated. The prospective price level for the year, though seemingly low, is not expected to curtail production to any extent.

The foregoing movements of supplies of course refer as well to the demand for refined sugar as reflected in the movements of raws, and vice versa. The demand for export and for domestic use has far exceeded anything expected in January. A continuous movement of both cane refined and domestic beet refined will no doubt prove a satisfactory year for both interests, there being ample room for both and a decided improvement in sugar conditions for the manufacturer. The products of manufacturers using sugar have also experienced a good demand following the turn of the year, and at reasonable prices there is no reason why manufacturers should not operate successfully this year. Conditions are better and more encouraging than they have been since pre-war times. Safe and sane commercial trading and manufacturing in sugar and its products foretells a progressive year with reasonable profits, without the sensationalism and disastrous operations of the past.—February 6th, 1922.

Orleans. Old and new crop Cubas are well together in price, but new crops have not come fully into the market as yet.

Refined sugar for export continues steady at 3.25c F. A. S., with the demand off slightly at this price. Domestic refined sugar continues in process of distribution of purchases during January, with the demand at present level of 5/5.10c continuing only moderate.

The market looks steady with only moderate fluctuations expected for some time.

It is believed that more than half of last year's record U. S. beet crop has now been sold.

From recent reports of responsible financial and commercial interests, the Cuban situation is known to be rapidly improving. Similar improvement in conditions is apparent also in Porto Rico.

The New York raw sugar futures market has been for some weeks a profitable field for operations of sugar and outside interests. Favorable margins have prevailed between the price of actual sugars and futures on the exchange. Operators have taken full advantage and accomplished a very profitable business.

New York Sugar Market

February 7, 1922.

Steadiness seems to prevail, fluctuations being only moderate and support to the market being apparent when declines seem likely. The situation seems now well in hand, owing to renewed confidence of sellers, following liquidation in raws of a month ago and the heavy demand for sugar during January and the outlook for a continued steady demand. The raw sugar market at present is steady at 2 3/32c C. & F. for Cubas, or 3.70c duty paid, at which last sales were made to operators. Europe continues a good buyer of raws, last sales recorded at 11/9d. C. I. F. France and England. Buyers are now 11/6d. C. I. F. without obtaining any sugar in quantity, owing to congestion in Cuba at the ports on shipments already contracted for. Business continues from day to day on an F. O. B. Cuba basis of 2c to 2.05c. Porto Ricans have not come heavily into the market as yet, having practically no influence on prices as yet, although they have been selling moderately at a discount owing to refiners running on duty-paying raws. Last sales were at 3.61c C. I. F. New York and New

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A Message from Walter Hughes

(Continued from page 51)

ready done, and that it is hardly to be expected that Congress would do anything this year—but the probabilities are it will not be more than a year before they will again begin to consider this question of a revision.

An Organized Industry Will Eliminate the Tax

Now what will we do? Well, in the first place, I want to tell you, with all due respect to anything that anybody did in connection with this proposition, that it was largely through the efforts of the members of the National Confectioners' Association that the tax was reduced from five to three per cent. In other words, it is up to you as to what will be done when we consider this question of a revision of the present tax. I know, because of the conferences that I had with the senators and congressmen there in Washington, particularly the senators, that it was the individual influence of their constituents that had more to do with the question of what they did with respect to voting on that question than anything else.

Now what we have got to do is to get out and thoroughly organize the industry. We can profit by the experience that we had this last year, and we certainly ought to profit by the experience of other big industries. And if every state in this Union that has a candy factory or a jobber or a retailer can be organized, and we can bring committees from these various states to Washington to work with the congressmen and senators along reasonable lines, convincing lines, I feel absolutely certain that we can get that tax absolutely eliminated when that Act is taken up for revision, and that is the only way in which it is going to be done.

Tariff on Almonds and Walnuts

I might speak just a word before closing about the tariff. This question of the tariff is, perhaps, a rather serious proposition, and yet not so serious as the tax, because it doesn't come into such direct relation to our business.

As you men know, the industries out in California have asked for an increase of 275 per cent in the tariff on walnuts and almonds. Now a reasonable increase would have been all right, but a 275 per cent increase is absolutely ridiculous.

I talked to some of the men in the almond industry while I was out there, men who will come out and tell you what they think, who say that there isn't any question at all but what it is ridiculous to ask for any such an increase of the tariff.



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There are certain reasons why those increases have been asked for, and if I had had in my head the information that I obtained while I was in California from the industry itself and could have used it in my arguments before the Senate Finance Committee, I think that it would have made a very decided impression.

Now there is a reason why the California Almond Growers' Exchange and the Walnut Growers' Exchange are asking for these large increases. The Senatorial Bloc, so called, is in control. The farmer is clamoring that something shall be done. That is why we have this depression out here in these agricultural states; the farmer is getting nothing for his products, or at least very little, at present. So the farmer has come to Congress, and the farmer is heard. Don't think for a moment now but that the farmer is heard; the strongest organization in the United States is the farmers' organization when it comes to national or state legislation. Next to that comes the labor organizations, and they will listen very attentively when any of those organizations have anything to say.

The walnut industry was satisfied with a $7\frac{1}{2}$ -cent tariff—it is now 4 cents—until they found the almond industry had asked for 15, and then they asked for 15, merely because they thought they could get it.

Our increases on various other raw materials are very, very large. It is somewhat doubtful as to when this tariff matter is going to go through, but we are doing the best we can to prevent these increases on the items I referred to from going into effect.

Make Your Own "Good Conditions"

Now, in closing, I referred a moment ago to conditions. Conditions this year are going to be just exactly what you make them. I don't want to refer too often to this question of backbone, but that is what you must have if you are going to make a success of your business this year.

Furthermore, you have to have faith. You have to have faith in yourself, you have to have faith in your industry, so far as the future is concerned. I remember Mr. Price was the first man that coupled up the three most important words in the industry—"You must have Quality, Service, Salesmanship"—and their relative importance, in my opinion, is in the order in which I have mentioned them, and with that steel rod for a backbone and full consideration to those three, you will be proud of what you have accomplished this year, and the result will be an incentive for greater accomplishments next year.

(Prolonged standing applause.)

WARFIELD CHOCOLATE CO.

536-552 West 22nd Street
CHICAGO



Specializing in

Quality Coatings FOR ALL PURPOSES

May we submit samples
for your consideration

AFFILIATED WITH
THOMSON & TAYLOR CO.

"Let your machines toil and your men conserve their energy"

AUTOMATIC MACHINERY

Designers  Builders

DESIGNING ENGINEERING BUILDING

OUR EXPERIENCED ORGANIZATION AT YOUR SERVICE

It is unnecessary to dispose of your present Machinery. They may be re-designed to serve you more efficiently.

Improved Machinery—Reduced Cost Reduced Cost—Increased Profits

Our representative will be pleased to pay you a visit

HERBERT H. GILES, Phone Bryant 9043 105 W. 40th St., New York

DRY MILK

CREMORA "A" (Dry Whole Milk) has, by uniform quality and sterling merit, won its way into nearly all of the large Milk Chocolate plants in this country.

CREMORA "CS" (Dry Cream) contains 53% pure butter fat, makes delicious Caramels, Fudge and Ice Cream.

THE DRY MILK COMPANY, 15 Park Row, New York

U. S. Food Administration License No. G 00830

SETTER HARD MAPLE SUCKER STICKS

BOTH BLUNT
AND POINTED

Large stocks always
on hand

Samples and prices will
convince you that these
are the sticks you
ought to use.

Write

SETTER BROS. CO.
Cattaraugus, N.Y.

Crystallization

(Continued from page 33)

Vibration; too much or too little invert; colors and flavor. Sometimes the trouble is caused by setting the product in a room of uneven temperature. At other times it has been caused by not wiping the top of the pan while boiling and small particles of grain sugar dropping back into the batch after the cook has been completed. The trouble shows up apparently after the goods have aged from one to three months. In goods which have been colored an apparent discharge of color has taken place and white spots appear. In some instances these spots are very hard, in fact, the whole confection is far from being a cream. In other cases the spots will be more or less soft and under the spot the confection will be of the proper consistency. In some cases we have definitely established the fact that these spots were caused by too much invert sugar. In other cases we have found too little invert sugar, and graining had set in due either to drafts or vibration.

I remember a few years ago that a manufacturer had this trouble, which was entirely confined to the goods he had exported to England. His product was perfect when it left the factory and upon the arrival in England various amounts of these goods were found to be spotted.

Upon examination of the whole matter, it was evident that the goods had been shipped too soon after manufacture and that the atmospheric condition and vibration were responsible for this trouble.

In all classes of goods alcoholic flavors, and by that I mean essential oils dissolved in alcohol, can cause spotting by improper mixing in the batch and the alcohol crystallizing certain parts of the batch in spots.

Whenever a confectioner has trouble other than fermentation, he can safely say in most cases that it is faulty crystallization. By that I mean either too much crystallization or not enough. His procedure should then be to determine if he has too little or too much invert sugar present. After that a systematic study of temperatures and all ingredients and conditions of manufacture should bring to light the cause of the trouble.

Are There Any Questions?

May we have a roundtable discussion on the application of Dr. Murphy's remarks on "Crystallization" or any other phase of the subject of this series.
—EDITOR.

Value of Laboratory Analysis to Confectionery Industry

(Continued from page 31)

The U. S. Government has made it their task to clearly define what may be considered pure food and has established the numerous laws well known to everybody. These laws do not define the grades of your confections as long as ingredients used therein are fit for consumption. Years ago there was a considerable talk about glucose in the use in foods. The analyst alleging commercial glucose as an adulterant is frequently asked in court as to its healthfulness, so that the following conclusion of a committee appointed some years ago by the National Academy of Sciences to ascertain among other things whether there is any danger attending the use of this product in food are to the point: First, that the manufacture of sugar from starch is a long-established industry, scientifically valuable and commercially important; second, that the process which it employs at the present time are unobjectionable in their character and leave the product uncontaminated; third, that the starch sugar thus made and sent into commerce is of exceptional purity and uniformity of composition and contains no injurious substances, and, fourth, that through having only about two-thirds sweetening power of cane sugar is in no way inferior to healthfulness, there being no evidence before the committee that maize starch sugar either in its normal condition or fermented has any deleterious effect upon the system even when taken in large quantities.

From this you see that all investigations have only been carried out from a standpoint of health. The question arises now not whether confections answer the requirements of the pure food laws, but whether a standard would not be advisable to see whether they are made from simple natural products or made, if I may use the term, synthetically with the aid of chemicals and cheaper products.

If such classification is feasible or not rests with you. I hope I have made myself clear that the confectionery industry should more strongly consider the benefits of the chemist than it has done in the past.

Volunteers Wanted

Will the chemists and superintendents please take the initiative in suggesting subjects to be included in our editorial program and contribute your own comments and experiences for the benefit of the fraternity of practical men in our industry?—EDITOR.



Raw Refined SUGAR Foreign Domestic

DWIGHT O. PALMER

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Specialist in Representing Foreign and Domestic
Firms as Broker and Agent

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SOFT WOOD

SUCKER STICKS

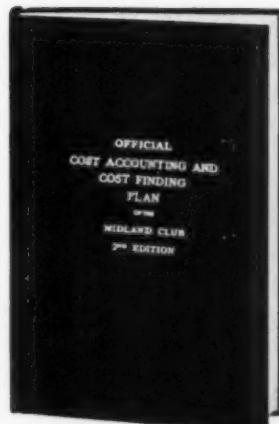
**The Better Kind—
—Cost Less Than Hardwood.**

Our sticks now successfully used
in machine production.

AMERICAN DOWEL CO.
MILFORD, N. H.

OFFICIAL Cost Accounting and Cost Finding Plan

Adopted by
The Midland Club



\$3.00

the copy

For Sale by

The Candy Manufacturer

30 North La Salle St., Chicago



Appearance Sells Candy quite as much as taste

STOP at the very next candy-store window. Give the candies displayed in it a critical once-over. Imagine yourself a candy consumer—rather than a candy maker.

Now, then, which candies attract you quickest?

The foil-wrapped ones—don't they? There is no getting around it. The foil-wrapped pieces seem to jump right out of the window. No one but a blind man could pass by their glitter and sparkle.

Conley Foil is used by many candy manufacturers for wrapping bar goods and individual chocolates—and for lining and decorating candy boxes. This is mighty good selling help for you candy makers. It comes back to you in the form of quick profits and rapid turnover.

Conley Foil is one of the best kinds of candy insurance you can tie up to. It keeps your candy fresh all down the rough road of distribution—it keeps out moisture, dryness, dust and odors—it preserves the quality of your goods.

It is certainly to your interest to get our suggestions on how Conley Foil can help make your candy sell faster. We'll gladly send samples and prices.

The Conley Foil Company

541 West 25th Street : New York City

Address by E. K. RICE

(Continued from page 21)

surplus stock brings prices unwarranted by production costs. The making of such prices brings in its turn market demoralization and its attendant evils. It is human nature to desire to operate a plant at capacity, but it is poor judgment to attempt to do so in the way the past year has witnessed.

A Precedent from Other Industries

Let us consider how other industries have met similar situations. The California Raisin Growers a few years ago faced a large over-production. Did they attempt to move their goods by ruinously low prices? No. They were wise enough to realize that cutting prices never increases the demand. It is an economic truth that rising prices stimulates the demand but declining prices invariably curtail it. They turned to advertising and through it in a comparatively short time increased the demand so tremendously as to not only take up the surplus that troubled them, but were actually forced to increase the production.

Does not their experience point the way out of our difficulties? Can we not stimulate the demand to such an extent as to ultimately take up our surplus capacity and by increasing our operations reduce our costs and our selling prices?

How Good Advertising Functions

Advertising has more advantages than that of creating or increasing demand. Formerly it was merely a method of calling the attention of the buyer to your desire to have him purchase your goods. Now it is the highest type of salesman at your command. A salesman reaching more possible purchasers than is humanly possible for any salesman in your employ to reach. A salesman making definite and positive statements about quality, service and price. Statements that must be true, that must be sustained absolutely by the goods and by their producer. Advertising to succeed must be honest. Therefore, advertising forces us to be honest in the manufacture of our goods, to be honest in the service we offer. In short, advertising influences us to produce higher quality goods, to create better factory conditions and this in turn brings about a better tone in our workrooms and with our workers.

Reflex Action of Advertising

A writer in a recent issue of Scribner's illustrates this feature of advertising by a story. A man operating a hotel at a summer resort concluded to advertise, making a contract with an agency. The task of preparing the copy was delegated to a new man on the force with instructions to write the copy for a booklet to be sent to prospective guests, describing the kind of a hotel where he would like to spend his vacation. The copy was written describing a hotel where the service anticipated the wants

of the guests, where the clerks were human and approachable and the proprietor a sort of good angel hovering in the background. The copy was forwarded to the advertiser and in due time was returned with the comment: "This is bully but, you see, that isn't exactly the kind of hotel I keep." "Maybe not," replied the advertising writer, "but it is the kind of hotel you ought to keep."

Advertising lays stress on the good qualities of the merchandise, on the service rendered by the manufacturer; on the conditions surrounding its production and on the value offered. Thus, advertising makes us better merchants and better manufacturers. We have for several years dreamed and talked of co-operative association advertising, now lets take off our coats and make our dreams come true.

The National Association at the convention last year authorized its executive committee to work out a concrete plan. Their work has brought into being the Publicity Committee of the National Confectioners' Association, of which Mr. V. L. Price is chairman. We have prevailed upon him to address us during our meeting and he will present a definite plan for the beginning of a national advertising campaign. It deserves and I hope it will receive your favorable consideration and I trust you will assure Mr. Price of your earnest support, both morally and financially.

Do You Employ Laboratory Service?

Have you ever stopped to think that in a sense your factory is a chemical laboratory? Has it ever occurred to you that more attention to the chemistry of your processes might improve your product and perhaps lower your costs? Consider carefully what will be said on this subject.

(*Mr. Du Pont's address on the Value of Laboratory Service appears in this issue.—EDITOR.*)

It may suggest a new line of work for our organization.

Now for a Banner Year

My earnest hope and belief is that we have seen the worst of the business storm and that the present year promises so much of cheer that we will forget the grief of the past. Your courage and hopefulness during this trying period proves the truth of the thought expressed by Ella Wheeler Wilcox when she wrote:

"It is easy enough to be pleasant,
When life flows by like a song.
But the man worth while is the man who can
smile
When everything goes dead wrong."



UNIFORMITY of VANILLIN

FLAKY, white crystals, readily soluble in alcohol and soluble in glycerine. An ash content of not more than 0.05% and a melting point of 81° and over."—this, briefly covers the specifications of VANILLIN-Monsanto.

These specifications may sound uninvolved, but the utmost manufacturing skill is necessary to have each succeeding batch of VANILLIN identical when it is produced on an extensive scale.

Only after years of earnest, scientific effort were we able to accomplish this uniformity in our finished product, which is so highly desirable to the users of this important flavor.

Each lot that is marketed by us must measure up to the exacting standards which we adopted years ago.

Freedom from off-color (yellow color) and a melting point one full degree above the requirements of the United States Pharmacopoeia assure full strength, highest purity and true flavor.

Monsanto Chemical Works St. Louis, U.S.A.

Also Manufacturers of
COUMARIN-Monsanto
(*The Original American Coumarin*)

Stocks of VANILLIN-Monsanto are carried at St. Louis, New York, Chicago, Minneapolis, San Francisco and Los Angeles. Thus VANILLIN-Monsanto at all times is easily available to the consuming trade.

VANILLIN-Monsanto is Uniform!



54 Years

is a record that we are proud to boast of in supplying Gelatine to the trade throughout the United States.

Time has proven the purity, quality and uniformity of our product.

*We can serve you no matter
what your requirements may be*

MILLIGAN & HIGGINS GELATINE COMPANY
222-224 Front Street New York

WE CAN LOOK AFTER YOUR REQUIREMENTS

FOR

CANDY BOX WRAPS

A Beautiful Assortment of Subjects Carried in Stock

Excellent Facilities for Reproducing Package Dressings
which you are using regularly

ALSO FOR

Creating Exclusive Designs for New Propositions
Which Demand a Superior Quality of Workmanship

YOUR INQUIRIES SOLICITED

The Henderson Lithographing Co.

"All that is Good in Lithography"

CINCINNATI, OHIO

VON DANNENBERG & PICK
82-92 Beaver St.—NEW YORK CITY—129 Pearl St.

BROKERS IN

**All Grades of Cocoa Beans, Cocoa Butter
and Cocoa Products**

Good Morning—

Here's the one you've been
wanting for a long time.

The READ Double-Arm Mixer

A machine that will mix a large batch
as well as a small one.

A machine that has an established
record.

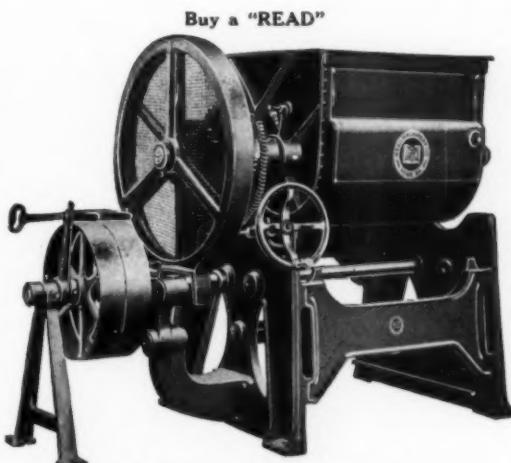
A machine that has won the greatest
preference in the world by its past per-
formance.

Today there are over 10,000 READ
users in this country and everyone has the
same story that once one of our machines
is put into use they would not and could
not be without it.

A few of the prominent users whom we invite you to get in touch with:

Huylers.....New York City Lofts, Inc.....New York City Tiffin Product Co...New York City
Ludens.....Reading, Pa. York Chocolate Co.....York, Pa. Auerbachs.....New York City

Don't fail to see this space in the next issue



READ DOUBLE-ARM MIXER

READ MACHINERY COMPANY - - - - **York, Pa.**

Highest Grade Shelled Nuts

1885—IMPORTERS—1921

SPENCER IMPORTING CO.

163 Greenwich Street, New York City

A Typical Repeat Order for Subscription to *The Candy Manufacturer*

MACY'S FACTORY
517 West 35th Street
NEW YORK

February 13, 1922

*The Candy Manufacturer Publishing Co.,
Chicago, Illinois.*

Gentlemen: "The Candy Manufacturer" has sold itself to us again.

There are so many good things in it that I am loath to pass it on until I have digested every article.

Will you, therefore, enter our subscription for another copy of the Manufacturer to start with the January number.

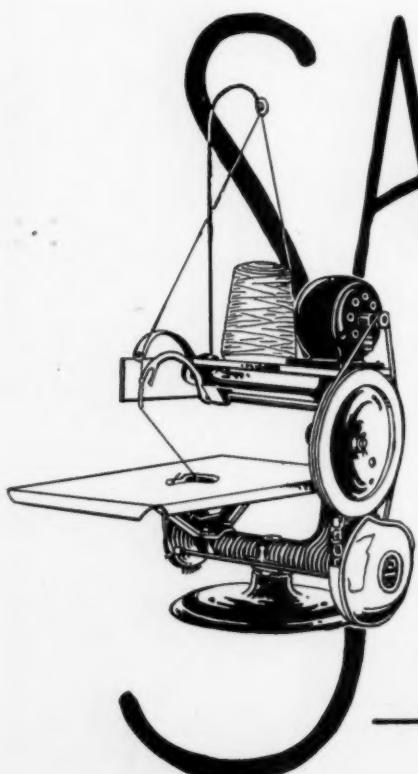
Can you let us have two copies of the January number?

Address the new subscription to Mr. A. J. Hemlick, Macy's Factory, 517-527 West 35th Street, New York City.

Yours very truly,
MACY'S FACTORY,
(Signed) M. M. Kaplan.

BENDIX PAPER CO.
Paper Specialties for Candy and Perfume Manufacturers
67-69 IRVING PLACE
NEW YORK
Glassines.
Paddings.
Sheet Gelatine.
Bendifane etc.
Factors for
Geo. Schmitt & Co. Inc.
Art Lithographers and
Printers since 1874
Distinctive Labels and Seals

Direct Importers of
French Bendifane
(Manufactured by Compagnie la Cellophane)
and
Genuine Watoline with a
Glassine Back



SAXMAYER

A Machine Installed
Is Money Saved—

To Say Nothing of the Convenience

Candy Manufacturers who are using the Saxmayer Bundle Tyers say they could not get along without them.

Here Is Our Free Trial Offer

We will ship this machine to you on 10 days' trial and if you don't find it one of the most profitable investments you ever made—return the machine.

Simple to operate—Just attach to an ordinary light switch. Requires no experience to get excellent results.

Write for complete information.

— **National Bundle Tyer Co.** —
Blissfield, Mich.

Form No. 11

Treating Overhead Expense

(Continued from page 29)

included items heretofore mentioned. This charge is expressed in per cent relation to the total sales and the percentage deducted from the sales price to determine the net selling price of any piece or package.

It will be noted that the expense analysis forms are drawn in such a way as to show monthly comparisons as well as the period to date figures and will instantly mirror any increases or decreases in this cost factor.

In order to obtain more readily a record of expenditures which should be charged to expense, it may be necessary to make a slight change in bookkeeping methods in some plants. Invoices, as they come, should be recorded in a Purchase or Voucher Register (see form No. 11). This book would contain every invoice for purchases; also all disbursements for whatever

cause they may have been made, either labor, raw materials, supplies or selling expense. The book will then present a complete record of everything that the business has become liable for, together with its analysis under the headings of the proper accounts in the General Ledger, allowing the totals to be posted monthly and the detail to be posted to the expense analysis.

The analysis of expense as outlined herewith may seem formidable from a clerical point of view. Such, however, is not the case. It will not take more than from one to three days a month of a clerk's time to operate the record. Certainly for this small expense of clerical effort the results obtained would be more than worth while.

Testing of Corn Syrup

(Continued from page 47)

(Continued from page 77)
 centage) gives the total solids contained in the 100 cc. The amount in one cc. multiplied by the number of cc. required to reduce 25 cc. Fehling solution gives the total dry matter required to reduce .125 grams dextrose (the amount equivalent to 25 cc. Fehling solution); from this the percentage of reducing sugars is readily figured. The above may be expressed more readily as follows: equivalent dextrose (purity) equals

cc. used \times Specific Gravity \times 5 \times corrected brix. For example, observed brix 34.0 temperature 23 degrees Centigrade, Specific Gravity corresponding to observed brix 1.149, corrected brix 34.4, cc. required 14.1. Then, per cent dextrose

$$\text{equals } \frac{14.1 \times 1.149 \times 5 \times 34.4}{1000} = 44.8.$$

Other Tests

The determinations described above are all that will ordinarily be required in order to properly test out a sample of corn syrup. Determinations such as ash, minute traces of nitrogenous matter, total amount fermentable, and the like would scarcely give information of value to the confectioner. Tests as to the boiling properties of corn syrup and sugar in different proportions will be discussed in a following article.

Issue of February, 1922

Present Conditions

(Continued from page 23)

employees on a non-productive basis. So these slack periods add to our losses unusual items of expense and the dead loads of under-production. When we figure out that by cutting prices we can stimulate sales and production, we fail to realize that we have competitors who are as equally anxious for business as we are, and that these competitors, to hold their business, will meet our cut prices. Then the thing that happens is that we have had but a temporary benefit, if any, and we are again dividing the business with our competitors. We have not increased our sales or production permanently, we have not reduced our losses in labor and overhead, and we have forced ourselves and our competitors down to a basis of gross profit out of which neither of us can pay expenses.

One of the greatest faults of many of you is that you haven't the ability or something to recognize the fact that some of you can get more money for your goods than others, because your reputation is better, your organization stronger, your goods and service more satisfactory. And also that others who don't possess these qualifications must undersell those who do in order to get a share of the business. So it sometimes seems to me that the blame may not necessarily lie entirely with the price cutter, but with the other fellow who meets the price cutter, instead of maintaining the right relative difference in price to entitle each to a proper share of the business.

The one salvation is for those who can maintain a fair profit to do so, but not a profit that will permit of radical underselling without a loss.

Other industries bigger than your own are facing these same issues, and if the things they have decided upon as remedies are right remedies, and I think they are, then co-operation during distressed conditions is the one method of solution.

Many of you during the war period, when business was good and co-operation was unnecessary were enthusiastic co-operators, but now that business is bad and co-operation is necessary, you are entertaining thoughts of vengeance, nursing false theories, and in so doing breaking down the right standard of profit, injecting into the situation insane and destructive trade practices, and all in anticipation of an outcome that will leave you well and sound to proceed with your business on a profitable basis after your competitors are deceased.

We should stop to think that the spirit of the times is peace conferences, not war councils. The nations of the world, supported by the people of the world, are co-operating to prevent war. It is no different in industry

than in politics. The solution is not more war, but more co-operation.

Surely one of the crying needs of the world today is better business, and through co-operation only can the things that will make better business be brought about.

Unless the warlike attitude amongst the confectioners changes it can be easily seen that the industry will have to undergo an operation.

Some of you here made a profit in 1921. Some came out about even, others lost a little and others lost a lot. Some of you are financially strong, others financially weak. Some of you have greater trade prestige than others, better organizations and sounder business policies, and as the result of these varying conditions it is evident that some will survive the operation and recuperate quickly, others will survive and be a long time getting well, and still others will die.

This should cause any man to stop and consider seriously whether or not after all the years he has devoted to the upbuilding of his business he should leave nothing to hope for in the future except an endless struggle to exist or to get well.

Business today is not unlike the workingman out of a job. He has no income. He must live, and if he has not saved for the future he is going into debt to exist, and when he gets a job again he must not only live on his current income but pay his debts.

I, for one, cannot understand how anyone can see any other solution of present day conditions than co-operation for the purpose of stimulating a knowledge of facts and for preventing acts influenced by suspicions, fear, vengeance and false theories.

I do wish that I could feel that the preaching I am doing would accomplish some good. It may bring expressions like "Price is right," but will any action follow to remedy the situation or to at least keep it from getting worse.

I know what is going through your heads. I know that you are just a crowd of human beings with all the uncertainties and fluctuations of human nature, and I know further that every last one of you in your individual ways are planning to make a profit out of your business, because that is what you are all in business for. But, good friends, there is only one way to make a profit, and that is to know your costs plus expenses plus losses of underproduction, and sell your products at a price that will bring you a profit over and above such costs and do business on sound business principles.

LA CELLOPHANE

(Reg. U. S. Pat. Off.)

"The peerless package wrapping paper"

A transparent protective wrapper, which may be either brilliant or subdued according to the result desired.

FRANZ EULER & CO.
173 LAFAYETTE STREET
NEW YORK



You get the benefit
of our nearly 40 years
experience through our
co-operative service.

Bring your flavor problems
to

FOOTE & JENKS

Expert Flavor Specialists
JACKSON, MICH.

*Most reliable gelatine
for Confectioners—*

WHITTEN'S GELATINES

are standard

—Established 1879—

Strength, purity and uniformity guaranteed

Manufactured by

J. O. WHITTEN CO.
Winchester, Mass.

Woolworth Building
New York City

20 East Jackson Blvd.
Chicago



A. F. L. SCHMIDT
Seward Factory, National Candy Co.
President, The Midland Club

Two Important Resolutions Passed by The Midland Club at their Annual Meeting.

RESOLUTION No. 4

WHEREAS, The giving of commissions, premiums, etc., to jobbers' salesmen has become a common practice upon the part of many manufacturers, which has a demoralizing effect upon salesmen generally and tends to reduce profits, and in many cases placed upon retailers' shelves undesirable goods, and causes dissatisfaction; and

WHEREAS, The pushing of the sale of such goods for the purpose of procuring the bonus takes the time of the salesman that might be more profitably employed in working other lines in which his house is more interested; and

WHEREAS, In permitting our salesmen to give their time to these goods, we are losing control of our business and furnishing the manufacturers with the means of introducing their goods at a very small expense to themselves; and

WHEREAS, In permitting some manufacturers to employ our salesmen in this way will force *all* manufacturers to resort to the same means of selling their product, and in this way take out of the hands of the employer the complete control of their salesmen; therefore be it

RESOLVED, That we, the members of the Midland Club, in meeting assembled, do denounce this practice on the part of the manufacturer as detrimental of the best interests of our business, and we do hereby pledge ourselves to absolutely refuse to per-

mit our salesmen to receive any bonuses of any character, from manufacturers, for the sale of their product.

RESOLUTION No. 7

WHEREAS, The ever-changing conditions in industry need the greatest care in the exercise of our judgment in its application; and

WHEREAS, The Midland Club is organized for the promotion and development of our industry to its most efficient basis; be it

RESOLVED, That an Open Price Plan described as follows be adopted:

Interchange of Prices that had been made throughout all the zones, each zone having a separate master sheet.

Report of Sales in percentage each month comparative to the same month of the year before, using the sales of the previous year as a basis of one hundred per cent.

Report of Outstanding Accounts in percentage to sales each month of the current year, taking the sales of the previous month as one hundred per cent basis.

All Zone Averages on report of sales increase or decrease and outstanding accounts be reported back to each member.

All Above Reports and report of changes in prices that had been made to be sent to the secretary's office and to be reported back to the members; and be it further

RESOLVED, That the Board of Directors of the Midland Club be authorized to put this plan into effect as promptly as possible, taking such necessary steps to do so, and that this

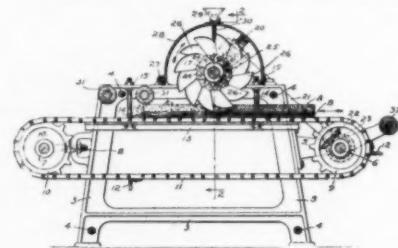


A. R. SCHEBLE
Richards-Scheble Candy Co.
2nd Vice-President, The Midland Club

plan be financed for the first year from date of starting out of the Midland Club's surplus at a cost of approximately fifteen hundred dollars, including legal advice.

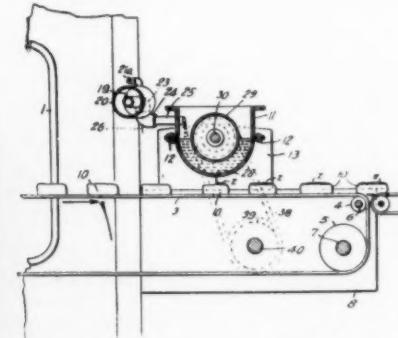
New Inventions

1,402,923. CANDY CUTTER. *Arthur E. Dempsey*, Council Bluffs, Iowa. Filed Mar. 18, 1920. Serial No. 366,870. 4 Claims. (Cl. 107—22.)



1. A machine for cutting plastic candy slabs into bars and squares, comprising a pallet-carrier, a knife-cylinder extending transversely above said carrier and having a plurality of spaced blades with spiral sharpened outer edges, and means for rapidly revolving said cylinder and slowly traversing the pallet-carrier thereunder.

1,402,287. CANDY-STRINGING MACHINE. *John Dilger*, Lyndhurst, N. J. Filed Sept. 11, 1920. Serial No. 409,537. 4 Claims. (Cl. 107—27.)



1. A machine of the class described, including in combination a conveyor for candies, a stringing attachment including a receptacle of thin cross section extending transversely across the top of said conveyor and having a row of apertures in the bottom thereof for discharging the stringing material on to the candies carried by the conveyor, an agitator in said receptacle to assist in preventing the stringing material from congealing, a shaft for said agitator and means carried by said shaft for moving the receptacle at an angle to the direction of travel of the candies carried on said conveyor.

CLASSIFIED ADVERTISING

Help Wanted, Situations Wanted, Salesmen Wanted, Machinery and Equipment
Wanted and For Sale, Etc., Etc.

RATES: 25c per line; \$1.00 minimum. Forms close on first of month.

MACHINERY FOR SALE

FOR SALE—FROM THE CONTINENTAL

Candy Co. Plant: 1 new Bausmann Refiner with Kettles, for coating; 1 new Bausmann Reducer with Refiner, for liquors; 1 new Green Cooling Table; 1 new Savage Beater; 1 second-hand Coating Machine with Kihlgren attachment; 1 second-hand Lozenge Machine; 1 second-hand Nougat Equipment; 1 second-hand Kiss Wrapping Machine, Model "K"; 1 second-hand Springfield Triple Mill; Copper Kettles, Mixing Kettles; 3 Lehmann, 4 Pot Cocoa Presses; 2 new Springfield Carey Presses, 16-inch Ram; 4 Springfield 60-inch Melangeurs; 4 Roll Granite Lehmann Refiners; 1 Mogul, Special Machine Company, 39 Cortlandt St., New York City.

FOR SALE—1 200-LB. BURKHARD
Vacuum Pan, Melting Kettle and Pump, complete; 1 38-inch Smooth Revolving Pan; 1 5-ft. Wood Stick Candy Batch Roller; 1 No. 200 Mills Power Drop Machine; 3 Pairs Brass Rollers for same; 1 50-gallon Tilting Burkhard Steam Kettle; 1 Caramel Sizer. All in A No. 1 condition. Smith & Son, Inc., White River Junction, Vt.

FOR SALE—VERY CHEAP. ONE REX
Cream Center Maker; one doz Miles Trays. Sylvester-Nichols Co., Little Falls, Minn.

FOR SALE—MODEL "K" KISS WRAP-
ing Machine, York Batch Roller, Vacuum Pan, Savage Power Steam Jacket Kettle. Royal Candy Company, Milwaukee.

FOR SALE—MILLS POWER DROP
Frame and Rolls, Burkhard Jap Mixer, Sizers, Mills Tilting Copper Mixer, Buttercup Cutting Machines, Hard Candy Ball Machine, 100 H. P. Steam Engine, 15 Ton Ice Machine, Starch Trays. D. Auerbach & Sons, 11th Ave. 46th to 47th St., New York City.

FOR SALE—ONE AUTOMATIC RA-
cine Sucker Machine in good condition. Lincoln Candy & Mfg. Co., Atchison, Kansas.

FOR SALE—COCOA BUTTER PRESSES.
Several used presses, Carey and Springfield make, 12 inch and 16 inch sizes, in good order. Address A212, c/o The Candy Manufacturer.

FOR SALE—1 NEW, UNUSED, U. S.
Improved Automatic Bottle Filling Machine with acid resisting glass enamel lined tank, 8 siphons, complete with saddles, screws and split pins, all contact parts triple silver-plated; price \$200 f.o.b., Minneapolis. The Brazilla Co., 321 5th Ave., S., Minneapolis, Minn.

MACHINERY FOR SALE—Cont.

FOR SALE—WOODBURN SUGAR MILL,
Type T2, Capacity 900 Pounds Per Hour. Powders sugar to extreme fineness. Used, but in first-class condition. Present cost of new machine \$1,500.00. H. A. Johnson Co., Dept. 4, 221-227 State St., Boston, Mass.

FOR SALE—MILLS 20th CENTURY AD-
justable Knife Candy Cutter, used 2 weeks; Braid or Ribbon Machine, 1 inch width; Cowhide Knickerbocker Agents Sample Case, double tray; Avery Exact Weight Scale, weighs $\frac{1}{4}$ oz., 6 lb. capacity. If interested, write for prices. Nold Candy Co., 1632 Larkin St., Shorewood, Wis.

FOR SALE—ONE 15 HORSEPOWER
Engburg Upright High Speed 400 R. P. M. 6 x 7 Steam Engine. Good as new. The Spangler Mfg. Co., Bryan, Ohio.

MACHINERY WANTED

WANTED—FOUR 38 OR 40 INCH RE-
volving Pans with Coils complete, also one pan same size without coils complete. Give age, price, etc., in first letter. The Edw. M. Becker Co., 659 Bolivar Rd., Cleveland, Ohio.

WANTED—BOX MAKING AND WRAP-
ping machinery. Price and description wanted of used scoring machines, corner cutters, stayning machines, wrapping machines for both self-sealing wax and loose-wrapped printed wrappers. Sophie Mae Candy Corporation, Atlanta, Georgia.

WANTED—FOLLOWING MACHINERY
in good condition: Liberty Coater, Junior Size; Starch Buck; Chocolate Melting Kettles, from 100 to 300-lb. capacity; Small Enrober; Caramel Cutter and Sizer; Filing Cabinet; Depositor, and Starch Printer. Merrill Candy Company, Merrill, Wis.

WANTED—MACHINERY FOR MANU-
facturing chocolate, cacao, cocoa butter, etc. We can use triple mills, tempering kettles, refiners, conges or anything else on this order. Quote full particulars and terms. Address A211, c/o The Candy Manufacturer.

WANTED—SECOND-HAND DUSTLESS
sugar pulverizer, capacity 300 pounds a day; three copper vacuum pans, capacity 40 gal.; three gum mixers, capacity from 40 to 50 gals. Address to "La Imperial," Fabrica de Dulces y Chocolates, M. Villarreal y Cia Apartado No. 56, Monterrey, N. L. Mex.

POSITION WANTED

CANDY MAKER—A1 ALL-AROUND
man, wishes first-class retail job. Address C. S., 209 8th St., Parkersburg, W. Va.

POSITION WANTED—Cont.

SITUATION WANTED—BY A1 RETAIL
candy maker; fifteen years' experience retail and wholesale; handle help, figure costs, and produce quantity and quality goods at minimum cost. American and a live-wire. Address B218 Candy Manufacturer.

CANDY MAKER, ALL-AROUND, HIGH-
class retail man wishes position with a reliable house. Long experience, best of references. H. Pearson, 574 Atlantic Ave., Brooklyn, N. Y.

WANTED—EXPERIENCED CANDY
salesmen to sell our line on commission basis to jobbers. We manufacture quality penny and five-cent pieces, specializing on suckers; also hard candy of exceptional quality, put up in jars. Cheer Candy Company, 755 Rebeccan Avenue, Wilkinsburg, Pittsburgh, Pa.

CANDY MAKER THOROUGHLY EX-
perienced on chocolate centers, counter goods and Easter novelties, desires position with high-class retail firm. Apartment 15, 1500 Stevens Ave., Minneapolis, Minn.

CANDY MAKER WITH TWENTY
years' experience on fine retail work, including hard goods, caramels, fudges, nougats and full line of chocolates and bon bons, desires position. Also understands thoroughly the making of ice cream and fountain syrups. A. J. Edwards, 69 Berkeley Street, Boston, Mass.

SALESmen WANTED

SALESman WANTED—A1 SALESman.
25% commission on fastest selling novelty to wholesale and retail confectioners and druggists; \$25.00 or more daily next three months. Time is urgent. Pocket samples. Nathan Stone Company, 2008 N. Major Ave., Chicago.

LINES WANTED

WANTED—CANDY OR OTHER LINES
to sell to grocers and confectioners. Have established trade and other facilities. The Gatlin Company, Manufacturer's Agents, Phoenix, Ariz.

SALESman—N. ALEXANDER, UNTIL
recently connected with N. Alexander & Co., Brooklyn, is open for good line to sell jobbers of metropolitan territory, New York. Address, 408 East Fourth St., Brooklyn, N. Y.

SALESman, EXPERIENCED, WISHES
first-class line of penny goods, nickel sellers or box goods for jobbing trade in Connecticut, New Jersey, New York states. E. Booth, 71 James St., Ossining, N. Y.

Rose Buds From Our Readers

From Candy Superintendents

Long Island City, N. Y.,
January 19, 1922.

The Candy Manufacturer,
Chicago, Ill.

Gentlemen—I saw a copy of your magazine today and was much impressed by it. I receive several other candy magazines which I have read for years back, but I believe yours is the best yet.

Enclosed find money order for \$10.00 for a five-year subscription—starting with the January issue, if you will, and anything else that goes with it.

If you can send me all or part of the 1921 issues I will be pleased to get same, advancing you whatever the cost may be upon notice.

Respectfully yours,
(Signed) GEO. W. HEADLEY,
Supt. Chocolate Manufacturing
& Moulding Dept. Loft, Inc.
N. Y.

A Real Scientific Trade Journal.

Louisville, Ky., Jan. 20, 1922.
The Candy Manufacturer,
30 N. La Salle St., Chicago, Ill.

Gentlemen—With great pleasure I acknowledge receipt of your CANDY MANUFACTURER.

This magazine, to my opinion, is unique in its class and certainly will be of immense benefit to anyone interested in the candy trade.

Kindly accept my check for \$3.00 for one year's subscription.

Wishing THE CANDY MANUFACTURER a long and prosperous life, and thanking you for having given existence to a real scientific candy periodical, which we practical men were so badly in need of, I beg to remain,

Yours very truly,
(Signed) A. Mennen, Supt.
GRADAS & GHEENS,

T. A. HUSTON & CO., INC.,
Manufacturing
Bakers and Confectioners.

Auburn, Me., Jan. 21, 1922.
The Candy Manufacturer,
30 N. La Salle St., Chicago, Ill.

Gentlemen—I received your January issue and was very much interested in same, so much so that you may enter my name for a year's subscription.

Have received some numbers before from our office. Have never in-

quired if the firm subscribes. I want one for myself and am having it sent to my home address, as I do not have time at the factory to read it as I like to.

I would like to see an article sometime that would interest help, under foreman (candymakers and helpers), written by some one that understands handling help.

Very truly yours,
(Signed) H. A. ELLSWORTH,
Superintendent.

Lima, Ohio, Jan. 24, 1922.

The Candy Manufacturer Pub. Co.,
30 N. La Salle St., Chicago, Ill.

Dear Sirs—Enclosed is cost of one year's subscription to THE CANDY MANUFACTURER, and, if possible, please date my subscription back to the first issue, excluding the January issue.

The magazine came to my attention only this month, otherwise you would have had my subscription sooner.

Awaiting with interest the back numbers, I am,

Very truly yours,
(Signed) H. J. MALONEY.

W. CULMSEE,
The Quality Shop—The Purity.
Wholesale and Retail.
Candies and Ice Creams.

Marysville, Cal., Jan. 29, 1922.
The Candy Manufacturer,
Chicago, Ill.

Gentlemen—Sometime ago we received a copy of your magazine and were very strongly impressed with the articles in it and most especially so because it gave something of real information to the wholesaler, and this is the thing which all the books that I have ever seen are as free from as a snake is free from hips.

I hope that you keep the good work up and you can count on me for a boost every chance I get.

Some of the sweetest words ever told: Enclosed find check for one year's subscription beginning with January, 1922, issue.

Please send to Mr. Lyons, Supt., care of The Henry Rhine Candy Co., Sixth St., San Francisco, Cal., a sample copy.

Yours for success,
A. Ashton Reed, Supt.
CULMSEE CANDY CO.
Box No. 221.

From Executives

Springfield, Mass., Feb. 3, 1922.
Mr. Earl R. Allured,

The Candy Manufacturer,
Chicago, Ill.

Dear Sir—Your letter of February first is acknowledged and we are enclosing three subscriptions for members of our organization.

Very truly yours,
KIBBE BROTHERS CO.
(Signed) Robt. J. Cleeland.

New York City, Jan. 28, 1922.

The Candy Manufacturer Pub. Co.
Stock Exchange Bldg., Chicago, Ill.

Gentlemen—I would appreciate it if you would kindly forward to me at your early convenience all back issues of THE CANDY MANUFACTURER, starting with Volume I, No. 1.

Also enter my order for an extra subscription, sending same to me personally at the above address.

Will you kindly send two of your cloth binders which are used to hold a complete volume of your magazine. We want to insert each current copy in these binders as they are received by us.

Upon receipt of your bill for the extra subscription and the two binders check will be sent you promptly.

Very truly yours,
HUYLER'S,
(Signed) Coulter D. Huyler.

CHOCOLATE PRODUCTS COMPANY

Everything in Chocolate

Baltimore, Md., Jan. 23, 1922.

Miss Prudence M. Walker,
Circulation Manager,
30 N. La Salle Street, Chicago, Ill.

Dear Miss Walker—I certainly thank you for the courtesy extended to me in sending your current number of THE CANDY MANUFACTURER and I assure you that it was read with interest.

Enclosed you will please find our check for \$3.00 covering one year's subscription to your magazine and shall await with interest your subsequent numbers.

With best wishes, we are
CHOCOLATE PRODUCTS COMPANY.
(Signed) W. K. Hadel,
Purchasing Dept.

Who Will Sell Their Back Copies?

Our supply is exhausted. Full subscription price will be paid for all returned copies—Editor

2829 Boylston Avenue
Seattle, Wash., Jan. 30, 1922.

The Candy Manufacturer,
Chicago, Ill.

Gentlemen — Enclosed find our check for \$3.00 covering subscription for *THE CANDY MANUFACTURER* beginning with the September, 1921, number, sending us copies of these back numbers at once.

Very truly yours,
CANTERBURY CANDY
MAKERS.
(Signed) R. Ferser.

There's No "Shell" to a Specialized Magazine—It's ALL Meat.

Denver, Colo., Jan. 22, 1922.

* * * Incidentally let us remark that your advertising set-ups are attractive enough to induce one to buy, little as they may have need of it. We always mention reading the ad in *THE CANDY MANUFACTURER* when writing to your advertisers, and much as we wish you all the good luck in the world, we hope your magazine will not become as others have done before, all shell (advertising) and no meat.

Yours truly,
THE NELSON RHOADS..
CANDY CO.
By W. H. Schatzel, President.

An Advertiser Checks Up Our Circulation Claims.

Dayton, Ohio, Jan. 26, 1922.

The Candy Manufacturer,
Chicago, Ill.

Gentlemen — The writer reached home Tuesday with a very nice line of orders hooked to his belt and everybody is pleased.

The writer took particular notice of the desk of everyone he visited to note if they had received *THE CANDY MANUFACTURER*, and while he does not want to give you any "bull," I failed to find one that did not compliment you on the January issue and several stated it to be the best live awake journal they have ever seen. You have evidently struck the right chord, so go to it.

With best wishes of

Yours very truly,
THE BALL CREAM BEATER
CO.
By R. F. Monahan.

Three five-year Subscribers from Canada

Quebec, Feb. 8, 1922.

The Candy Manufacturer,
Stock Exchange Bldg.,
Chicago, Ill., U. S. A.

Dear Sirs—We thank you very much for the two copies of the January issue of *THE CANDY MANUFACTURER* you have sent us, one to our president and the other one to the undersigned; we have been interested in the same.

Enclosed please find a money order to the amount of \$13.00; \$10.00 being for our subscription for five years and \$3.00 for the Official Cost Accounting and Cost Finding Plan adopted by the Midland Club.

Enter our subscription to *THE CANDY MANUFACTURER* for all back numbers, that is to say, all numbers since the beginning, as we suppose the first issue dates January, 1921.

We will be pleased to have every department head note the contents of every issue, which will interest them because your publication is a scientific one such as we have not yet seen.

As a five-year subscriber I hope that we will be entitled to receive the annual blue book as offered per your subscription blank.

BONBONS CANDIAC (CAN.) LTD.
(Signed) Maurice Lefebvre,
Secy.-Treas.

Montreal, Canada,

January 24, 1922.

The Candy Manufacturer,
1120 Stock Exchange Bldg.,
Chicago, Ill.

Gentlemen — Enclosed please find money order for \$13.00, covering my subscription to *THE CANDY MANUFACTURER* for a period of five years, which entitles me to the full privileges of your general service department.

It is understood that copy of Blue Book is sent gratis.

The remaining three dollars will cover cost of Official Cost Accounting and Cost Finding Plan which you advertise.

Kindly mail the above to my home address, 1130 Lajoie Avenue, Apartment 3, Outremont, Que.

Yours truly,

THE WALTER M. LOWNEY
COMPANY OF CANADA.
(Signed) Kenneth A. Rodgers

Pictou, Nova Scotia, Can.

December 1, 1921.

* * * A visitor last week picked up a copy of *THE CANDY MANUFACTURER*, and when asked what he thought about it said, "It is a modern candy journal."

The writer has some copies of trade journals printed in England around the 80's and the most striking point about them is that all the details are given about the manipulation.

The trouble with most writers is that they assume that the other man knows as much about the working of a formula as he does, and does not give the small points which make the piece the success it should be.

Mr. Murray, in his article, "Functions of the Foreman and Forelady," deals with the same point in giving instructions, but there are a number of workmen who are slow to pick up the details when given orally who could study a copy of a trade journal and get the information which they lacked much better than to listen for five minutes to directions given in a hurry and some of them omitted. Another point, when they read articles and absorb ideas, later they think the ideas are their own and will try them out, at the same time gaining confidence in themselves, later finding ideas for themselves and becoming more valuable. To me it does not matter how our men get the ideas as long as they use them and develop with the business.

Yours respectfully,

G. J. HAMILTON & SONS.
(Signed) H. C. Hamilton.

Toronto, Canada,

January 19, 1922.

The Candy Manufacturer Publishing
Co.,
Stock Exchange Bldg.,
Chicago, Ill., U. S. A.

We beg to acknowledge receipt of the January issue of your journal and congratulate you on the splendid publication that you have issued.

We are pleased to enclose herewith a money order for \$3.00 covering one year's subscription. Please send us a receipted invoice to cover this, which we will require as a voucher for our auditors.

Yours truly,
FLETCHER MFG. CO., LTD.

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Put them on your preferred list

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Subscribe to *The Candy Manufacturer*

A High Class Technical and Commercial Magazine of Production and Management
for Manufacturing Confectioners Exclusively

SUBSCRIPTION ORDER

The Candy Manufacturer

192

1120 Stock Exchange Building, Chicago:

Enter my subscription to **The Candy Manufacturer** for a period

of **FIVE YEARS** ONE YEAR which entitles me to full privileges of your General Service Department, including access to the Reference and Research Bureau and participation in the Open Forum of the magazine. It is understood that a copy of "**The Blue Book, An Annual Directory of American Manufacturers and Importers of Confectioner's Machinery, Factory Equipment, Raw Materials and Supplies**" will be sent gratis to 5-year subscribers.

(This offer will be withdrawn when we have received 1,000 subscriptions.)

5 Years, \$10.00. 1 Year, \$3.00

The first five hundred 5-year subscriptions constitute the Honor Roll of Charter Subscribers.

Send Invoice.

Remittance Enclosed.

Name _____

Per _____

Address _____

Now Being Compiled—

The Candy Manufacturer Blue Book

A Complete Annual Buyer's Directory with valuable statistical data and information of value to manufacturing confectioners.

The First Edition Free to Five Year Subscribers

Don't Miss the Next Issue

The First Annual
Sales Managers Number



ISSUE OF MARCH, 1922
(In the Mails March 15th)

In this issue the problems of production will be subordinated somewhat to a discussion of sales policies and problems and the merchandising of confectionery.

NOTICE: Executives, Sales Managers and Salesmen are invited to take part in the *Sales Manager's Roundtable*,—a feature of the next issue—an Open Forum which will represent, we hope, a comprehensive expression of the frank opinions, suggestions and outlook from the sales organizations of the manufacturing branch of our industry.

Send in your letter or manuscript to reach us March first.

EARL R. ALLURED, Editor,
The Candy Manufacturer Pub. Co.,
Stock Exchange Building, Chicago, Ill.



Manufacturers of

Pure Food Gelatines

BUILT on all the *latest up-to-date labor saving* lines to produce ALWAYS a uniform ARTICLE.

Our RAW STOCK supplied by our OWNERS assures THIS.

Our grades are of the *highest quality obtainable*, clear to the point of *transparency*, sweet, free of *odor*, and *guaranteed* to comply with all STATE and NATIONAL PURE FOOD LAW REQUIREMENTS.

Its wonderful whipping qualities insures a perfect marshmallow.

A TRIAL ORDER will convince you that these are the best grades of GELATINE in proportion to price that can be secured.

ATLANTIC GELATINE COMPANY HILL STREET, WOBURN, MASS.

BRANCHES

NEW YORK CITY
Room 3415, Woolworth Bldg.

BALTIMORE
1012 Union Trust Bldg.

CHICAGO
Suite 510, 118 N. LaSalle St.

SAN FRANCISCO
Room 240 Hansford Block,
268 Market St.

May We Have Your Reservation— for the First Edition of

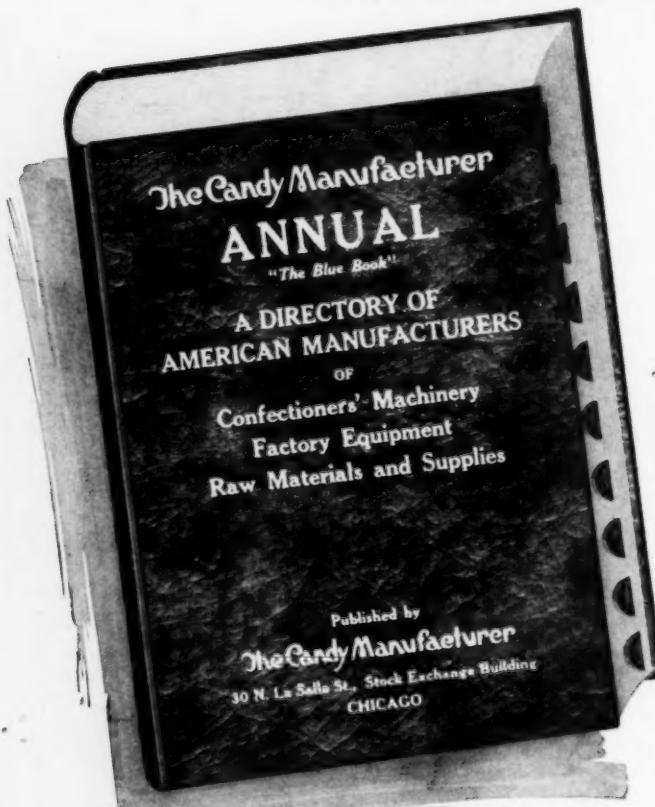
The Blue Book of the Confectionery and Allied Industries
Including

A Complete Authoritative Directory of

American Manufacturers and Importers

—OF—

Confectioners' Machinery, Factory Equipment, Raw Materials and Supplies



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In addition to the Directory feature described on opposite page, The Blue Book will contain:

An index of all associations, national, territorial, state and local within the confectionery industry, and the national associations in the allied industries.

Rulings, regulations and legislative situation affecting confectionery supplies and products. Statistical information on the industry. Reports and surveys of special value to the purchasing and sales departments.

A review of books, periodicals and technical literature on candy factory management, methods and materials and the industry in general.

A list of confectionery slogans in use.

Only a sufficient number of copies will be printed to supply the demand.

DO YOU WANT ONE?

A REGULAR BOOK—A CREDIT TO YOUR LIBRARY AND TO THE INDUSTRY

The Candy Manufacturer

Stock Exchange Building, CHICAGO

Reserve copy of first edition of **The Candy Manufacturer Blue Book** subject to acceptance at time of its publication.

Enter my subscription to **The Candy Manufacturer** for period of five years at your special rate of \$10.00, and send me copy of first edition of "**The Blue Book**," gratis.

Name _____

Address

(Use this Coupon if you wish, but we prefer your Letterhead.)

Price: Not More than \$5.00 or Less than \$2.50.

To be announced later when book is printed.

FREE To 5-Year Subscribers of *The Candy Manufacturer*

This offer withdrawn after 1000 subscriptions have been received.

When Published:

As soon as data can be compiled, probably in September, 1922.

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